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Algoma Forest Independent Forest Audit 2001-2006

Prepared by:

kbm
FORESTRY CONSULTANTS INC.

Thunder Bay, Ontario

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ON THE COVER A large yellow birch tree; an important wildlife and commercial species on the Algoma Forest.

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1.0 Executive Summary

This audit report for the Algoma Forest (the Forest) is the result of an Independent Forest Audit (IFA) conducted by KBM Forestry Consultants Inc. under contract to the Ontario Ministry of Natural Resources (MNR). MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003) requires that all Crown forests in Ontario undergo an IFA at least every five years. Regulation 160/04 of the Crown Forest Sustainability Act (CFSA) sets out the specific requirements for conducting the audits.

The Algoma Forest audit covers the five-year period April 1, 2001 to March 31, 2006. Clergue Forest Management Inc. and MNR Sault Ste. Marie and MNR Wawa Districts were the principal auditees. The Algoma Forest is located in MNR's Northeast Region.

The Algoma Forest was formed from the amalgamation of the former Wawa Forest and Algoma Forest and as such spans both Boreal forest and Great Lakes-St. Lawrence forest types. Tree species range from tolerant hardwoods (principally hard maple) and white pine to spruce, jack pine, white birch and poplar. Topography is also varied with significant portions of rugged terrain nearer Lake Superior. Several well-known large rivers run through the Forest (e.g. Montreal, Magpie, Agawa, and Batchewana). There has been a long history of logging on the Forest, and many of the historic operations have left stands in a degraded condition.

The Sustainable Forest Licence has been held by Clergue since 1997, prior to which MNR handled planning and management. Clergue is a management company formed through a partnership between St. Marys Paper, Boniferro Mill Works, Domtar, Midway Lumber Mills, Weyerhaeuser, and Columbia Forest Products. St. Marys Paper, Boniferro and Midway conduct timber harvesting on the Forest and all partners receive fibre from the Forest for their mills.

The purpose of the IFA is to:

- Assess compliance with the Forest Management Planning Manual (FMPM) and the CFSA;
- Assess compliance of the forest management activities with the FMPM, forest management plans and the CFSA;
- Compare planned versus actual forest management activities;
- Assess the effectiveness of forest management activities in meeting forest management objectives;
- Assess the effectiveness of any action plans resulting from previous audits; and
- Assess a licensee's compliance with the terms and conditions of the SFL.

Past highgrading practices have left the tolerant hardwoods of the Algoma Forest in a degraded condition; however, the audit team was impressed by efforts made by Clergue and some partner shareholders to improve stand conditions, make investments in operations to better utilize low-grade hardwoods and seek alternative markets for this material. Clergue has also undertaken stand improvement work in white birch stands by utilizing incentives available under Ontario's Forest Accord. These practices are directed at improving future forest condition with the goal of overall increased utilization of the forest resource, with benefits to the local forest industry and economy.

Based on the audit, 18 Recommendations were made. Recommendations may arise from audit team observations of material non-conformances or may be developed to address situations in which the audit team identifies a significant lack of effectiveness in forest management activities.

Five key findings arising from the audit are discussed below.

Collection and verification of values information by MNR Wawa District was incomplete and the information that was collected was not incorporated into the values map for planning. As a result, the most current, correct information was not used during preparation of the 2005-2010 Algoma Forest FMP.

It was not evident that wildlife values discovered during plan implementation were being marked for retention by tree markers or operations staff on all operations in the Sault Ste. Marie District, as required. Clergue and MNR both share responsibility through the compliance program, to ensure that this occurs.

Clergue and partner shareholders have made commendable efforts to improve overall utilization of the fibre supply, in particular as it relates to low quality hardwood. However, a comprehensive marketing and utilization strategy for under-utilized forest products from the Forest remains to be completed.

Some deficiencies in the implementation of Clergue's compliance program were observed. These related to the accuracy of information in some reports, the thoroughness of some inspections and the timeliness of reporting.

The audit team concluded that, with the exceptions noted in the audit report, management of the Algoma Forest was in compliance with legislation, regulations and policies and was effective during the term of the audit. The Algoma Forest was also managed in compliance with the terms of SFL No. 542257 held by Clergue Forest Management Inc. Forest sustainability is being achieved as assessed through the Independent Forest Audit Process and Protocol. The audit team also recommended that the Minister extend the term of the SFL for the Algoma Forest to March 31, 2027.

Rod Seabrook, CEA (SFM), EMS (LA) – Lead Auditor on behalf of the Audit Team

2.0 Introduction

This audit report presents the results of the Independent Forest Audit (IFA) for the Algoma Forest (the Forest). The audit was conducted by KBM Forestry Consultants Inc. (KBM) for the period from April 1, 2001 to March 31, 2006. The Forest is managed under a Sustainable Forest Licence (SFL) held by Clergue Forest Management Inc. (Licence No. 542257).

The Forest is located in the Ministry of Natural Resources' (MNR) Northeast Region and both the MNR Wawa and Sault Ste. Marie Districts. The Forest was amalgamated on April 1, 2005 from the former Algoma and Wawa Forests.

The audit covered implementation of the 2000-2005 Wawa Forest and Algoma Forest Forest Management Plans (FMPs) and planning and first year of implementation of the 2005-2010 Algoma Forest FMP. The principal auditees are Clergue and the two MNR Districts (Wawa and Sault Ste. Marie). Other auditees include contractors and other branches of MNR to the extent that forest management activities conducted by them are the subject of audit examination.

2.1 Audit Process

2.1.1 Purpose

The Independent Forest Audit Process and Protocol[1] (IFAPP) was developed by MNR to provide a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP states that the purpose of an IFA is to:

- Assess compliance with the Forest Management Planning Manual[2] (FMPM) and the Crown Forest Sustainability Act[3] (CFSA);
- Assess compliance of forest management activities with the FMPM, forest management plan(s) and the CFSA;
- Compare planned versus actual forest management activities;
- Assess the effectiveness of forest management activities in meeting forest management objectives;
- Assess the effectiveness of any action plans resulting from previous audits; and
- Assess a licensee's compliance with the terms and conditions of the SFL.

2.1.2 Audit Process Overview

The IFAPP contains 330 audit procedures that are potentially applicable to the Forest. Most of these procedures pertain to plans prepared under the requirements of the FMPM. The audit procedures serve as a framework to provide a structured approach to evaluating whether forest management activities meet the requirements governing forestry practices on Crown land in Ontario.

The previous IFAs were conducted separately for the Wawa and Algoma Forests in 2001. The implementation of the Recommendations contained in those previous audits was examined during the course of this audit.

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[1] OMNR 2006. Independent Forest Audit Process and Protocol. 26 pp. + Appendices.

[2] MNR. 1996. Forest Management Planning Manual for Ontario's Crown Forests. Queen's Printer for Ontario.; and, MNR. 2004. Forest Management Planning Manual for Ontario's Crown Forests - June 2004. Queen's Printer for Ontario.

[3] Crown Forest Sustainability Act, 1994, S.O. 1994 c. 25.

The audit process for the Forest consisted of six components:

A) Audit Plan[4]: KBM prepared an audit plan that described the schedule of audit activities, audit team members and participants, and auditing methods. The audit plan was submitted to MNR, Clergue, the Forestry Futures Committee, and the Chair of the Algoma and Wawa Local Citizens Committees (LCC).

B) Public Survey: KBM prepared a one-page public survey that was distributed to all organizations and to a random sample of one-third of the names on the District mailing lists provided by MNR. In addition, the public notice was posted and available for download from KBM's web site (www.kbm.on.ca). The purpose of the survey was to solicit public input and to provide respondents with an opportunity to identify and discuss any site-specific concerns on the Forest. A copy of the survey can be found in Appendix F. Notices were placed in five newspapers (Sault Star, Algoma News Review, Northshore Sentinel, Chapleau Express, and the Wawatay News) soliciting public input on forest management activities on the Forest for the period under audit. A copy of the public notification can be found in Appendix G.

   In total, there were 30 responses to the survey process. Two of these arrived after the site visit. A summary is presented in Appendix E.

   During the pre-audit visit on the evening of May 17, 2006, members of the audit team met with the Algoma LCC. The purpose of the meeting was to introduce the audit plan to the LCC and determine how its members wished to be consulted. This meeting, and further correspondence, resulted in a number of comments being provided to the audit team regarding forest management (see Appendix E). One Algoma LCC member participated in various portions of the field site visit and the closing meeting.

   The audit team met the Wawa LCC on the first night of the field site visit (September 11, 2006). One member participated in the field site visit and the closing meeting.

C) Field Site Selection: Pre-audit meetings were held in Sault Ste. Marie from May 17 to 18, 2006. The audit team used this time to conduct site selection. Annual Work Schedules (AWSs), Annual Reports (ARs) and other data sources provided by MNR and Clergue were used to ascertain the amount and types of forest operations conducted on the Forest during the course of the audit term. A stratified random sample of sites was then selected to ensure that selected sites were representative of the activities conducted on the Forest during the audit term. Figure 1 presents the locations of the field sites that were audited.

   Clusters of Free to Grow (FTG) survey areas were selected along the helicopter flight line between sample harvest depletion blocks. Twenty-three blocks in total were selected to ensure forest unit (FU), ecosite and operational representation. Additional stops were made to investigate access structures, log yards or other areas that the audit team deemed necessary.

   KBM committed to a sampling range of between 10 and 25 percent of key field activities and operations conducted on the Forest, depending upon the type of activity. Table 1 presents the sampling intensity of the field visits completed on the Forest.

D) Pre-audit Document Review: Prior to the site visit, the audit team reviewed documents provided by Clergue and MNR including: the Algoma and Wawa Forests 2000-2005 FMPs, the Algoma 2005-2010 FMP, the 1995-2000 Report of Past Forest Operations (RPFO), 2001-2002 to 2005-2006 AWSs, the 2001-2002 to 2004-2005 ARs, and the Comparison and Trend Analysis of Planned versus Actual Forest Operations (TAR) prepared by Clergue as a requirement of the IFA.

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[4] KBM Forestry Consultants Inc 2006. Algoma Forest Independent Forest Audit Plan. 15 pp. + Appendices.

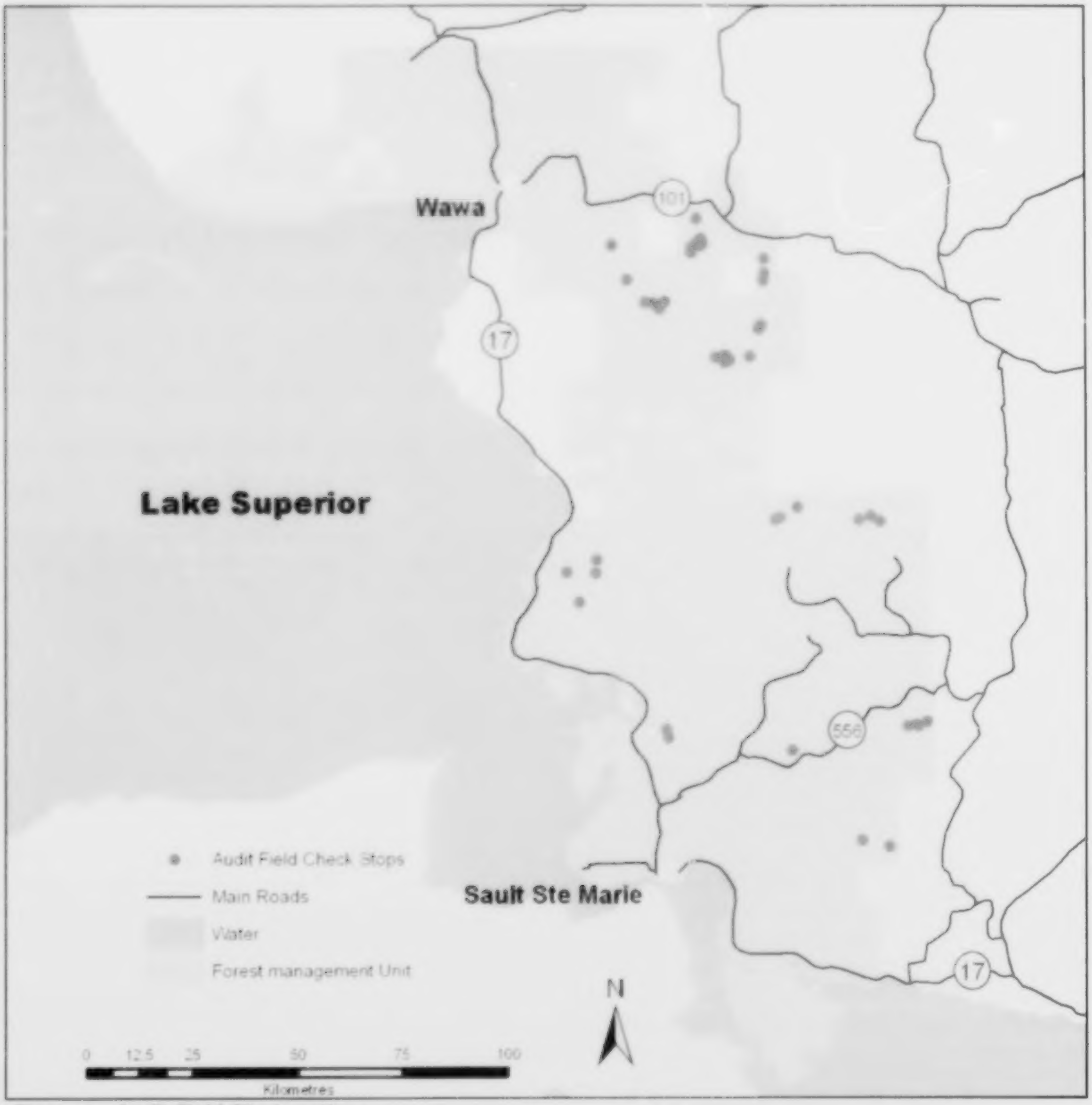
Wawa
101
17
Lake Superior
556
Sault Ste Marie
17
Audit Field Check Stops
Main Roads
Water
Forest management Unit
N
0
12.5
25
50
75
100
Kilometres

Figure 1. Audit Field Site Locations.

E) On-Site Audit: An opening meeting was held in Wawa on September 11, 2006. The audit team conducted interviews and field visits from September 11, 2006 to September 18, 2006 including discussions with members of the Wawa and Algoma LCCs, First Nations representatives, other key stakeholders, members of the public, and staff from Clergue and MNR. The audit team examined documents, records, and maps at the Clergue and MNR offices in Wawa and Sault Ste. Marie and examined 23 sites over four days where forestry practices had occurred during the audit period.

A closing audit meeting was held in Sault Ste. Marie on Tuesday, September 19, 2006. This meeting provided a forum for the audit team to present and discuss preliminary audit results with Clergue, MNR, and representatives of the Wawa and Algoma LCCs.

Table 1. Audit Sampling Intensity for the Algoma Forest.

Activity	Total** Area/Number (2001-2006)	Area/Number Sampled	Percent Sampled
Harvest (ha)	19,735	2,699	14
Renewal and Maintenance (ha)	28,742	6,380	22
FTG (ha)	10,415	1,364	13
Area of Concern (AOC) Categories* (#)	11	8	73
Tree Marking (ha)	11,418	2,139	19
Road Construction (km)	90	31.5	35
Road Maintenance (km)	201	54	27
Water Crossings (#)	105	21	20
Specified Procedures Review*** (ha)	5,058	1,661	33

* AOC categories refer to the different types of AOCs present on the Forest. Examples would include riparian areas, cool water fisheries, moose aquatic feeding areas and osprey nests. Numerous AOCs were associated with most sites selected for review of harvest and renewal operations. In addition, some sites were specifically selected to represent a cross section of AOCs.

** Amount of activity in 2005-2006 was estimated as the AR was not yet due.

*** The Specified Procedures Review involved the verification of maps, records, and fieldwork associated with Forest Renewal Trust Account expenditures for 2004-2005.

F) Final Report: In the final document produced by the audit team, the audit results are presented in conjunction with a brief description of the audit process and the forest licence area under review. An important distinction is made between Recommendations and Suggestions within the report. Recommendations draw attention to deficiencies in forest management that require corrective action. In most cases, Recommendations are a result of non-conformance to a law or policy, or specify a lack of effectiveness in forest management activities. Recommendations must be addressed in an Action Plan developed by the licensee and MNR as per Appendix E of the IFAPP. Suggestions are less serious in nature and provide advice for improving particular aspects of forest management. Auditees are not required to address Suggestions in the Action Plan, but are encouraged by the IFAPP to do so.

2.1.3 The Audit Team

The audit was conducted by an independent audit team assembled by KBM Forestry Consultants Inc. under contract with MNR. The audit team consisted of eight members:

- Rod Seabrook, CEA (SFM), EMS (LA), Lead Auditor
- Dave Thomson, R.P.F., Planning Auditor
- Tom Richardson, Harvesting Operations Auditor
- Gabriele Aleksa, R.P.F., Silviculture Auditor
- John McNicol, Wildlife/Ecology Auditor
- Susan Jarvis, R.P.F., Forest Modelling Auditor
- Mary Anne Seabrook, First Nations Auditor
- Ben Newman, R.P.F., Audit Secretariat

Audit team members and their responsibilities are described in Appendix B.

2.1.4 Guiding Principles

The IFAPP identifies the components of the audit process. There are eight guiding principles within the audit protocol (Appendix C). Each principle contains a series of criteria that guide the audit team in its assessment of achievement toward a given principle. Under each criterion, a number of procedures detail the assessment of auditee compliance and effectiveness. KBM assigns each of the applicable procedures to an auditor who, in turn, examines the evidence for conformity to the procedure.

2.2 Forest Management Context

2.2.1 Location of the Algoma Forest

The Forest is located in MNR's Northeast Region, within MNR's Sault Ste. Marie and Wawa Districts. The Forest extends from the north shore of Lake Huron to Pukaskwa Park, along the east shore of Lake Superior (Figure 2). It extends inland some distance and surrounds numerous blocks of private, large freehold, urban and park lands.

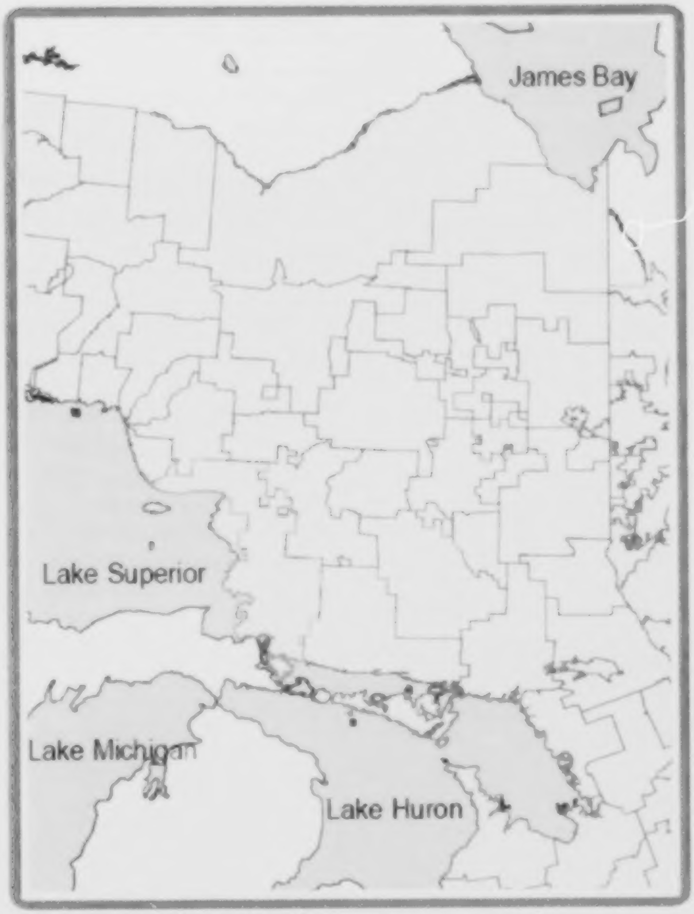

Figure 2. Location of the Algoma Forest. (in pink - map supplied by Clergue)

2.2.2 Algoma Forest Overview

The SFL has been held by Clergue since 1997, prior to which MNR handled planning and management. Clergue is a management company formed through a partnership between St. Marys Paper, Boniferro Mill Works, Domtar, Midway Lumber Mills, Weyerhaeuser, and Columbia Forest Products. St. Marys Paper, Boniferro and Midway conduct timber harvesting on the Forest and all partners receive fibre from the Forest for their mills. Clergue was certified to Forest Stewardship Council Sustainable Forest Management Standard in 2005.

Prior to 2005 the Forest was still two separate units, the Wawa Forest and Algoma Forest. The combined area reported in the 2000-2005 FMPs for those Forests totalled 1,713,148 ha (Table FMP-1). Only 948,657 ha was Crown managed land, including non-forested areas.

After amalgamation, changes to the licence area resulted in the 2005-2010 FMP reporting 1,561,874 ha total area with 803,783 ha being Crown managed (Figure 3). There is a significant amount of private and park land located within the Forest. A relatively small portion of the Forest is non-productive or barren and scattered.

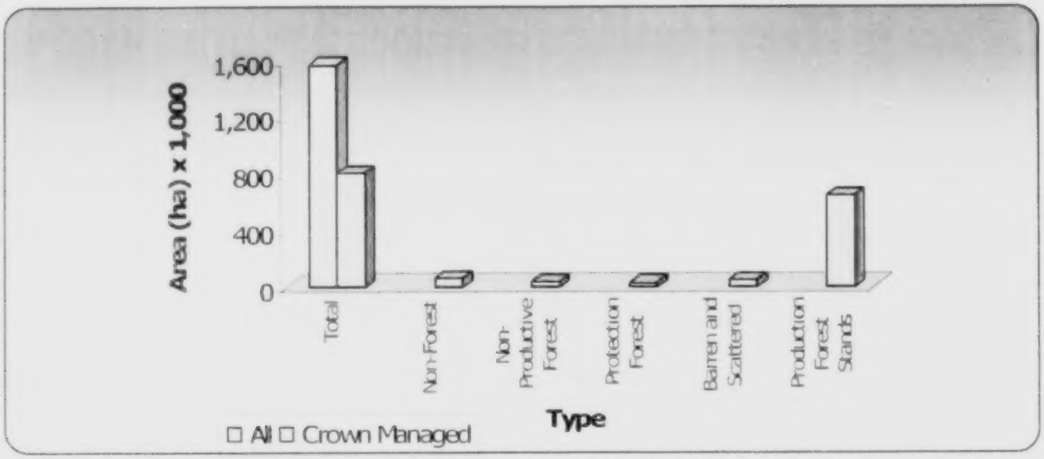

Figure 3. Forest Area by Land Type. (Source: Algoma Forest 2005-2010 FMP)

The following paragraphs are paraphrased from the description of the Forest in the Algoma Forest 2005-2010 FMP. The topography of the Forest is variable. Extremes occur closest to the shorelines of Lake Superior and Lake Huron, and influence road location and harvest operability.

The climate in the southern half of the Forest is strongly influenced by Lake Superior and Lake Huron. The mean annual temperature ranges from +2° C to +6° C. The mean annual precipitation is greatest along the shoreline of Lake Superior where it is 97 cm per year, and decreases to 81 cm per year inland.

The climate in the northern part of the Algoma Forest is very cold in the winter and cool in the summer. Lake Superior has a pronounced moderating effect on the climate in this area as well. Killing frosts may occur as late as mid-June, after the current year's vegetative growth has flushed, and it is not unusual for frosts to occur again by mid August.

The southern portion of the Algoma Forest is located in the Great Lakes-St. Lawrence (GLSL) Forest Region. The area is dominated by stands of tolerant hardwood (sugar maple and yellow birch) with lesser amounts of white pine, white spruce and aspen. Progressing north-easterly away from the Great Lakes, the Forest transitions to the Boreal. Most stands are mixed or pure white birch, trembling aspen, black spruce, and/or jack pine. Figure 4 illustrates the FU distribution of the Forest as described in the 2005-2010 FMP. The age class distribution, as reported in the 2005-2010 FMP, is found in Figure 5.

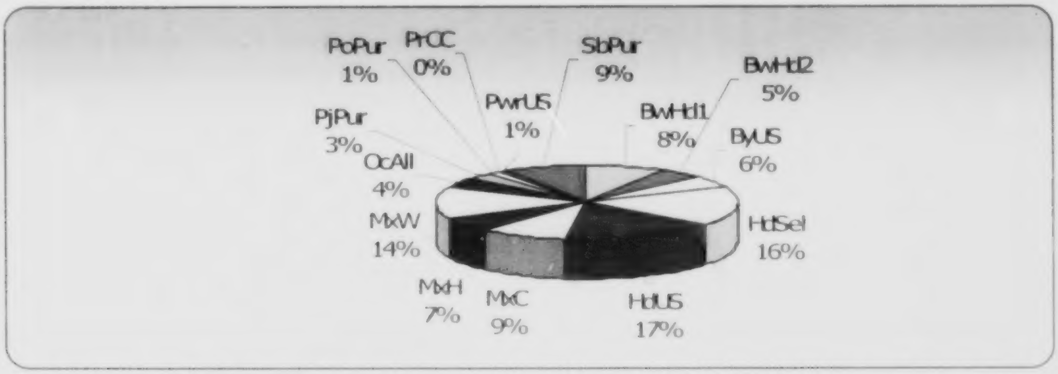

Figure 4. Available Managed Crown Productive Forest Area by FU. (Source: Algoma Forest 2005-2010 FMP)

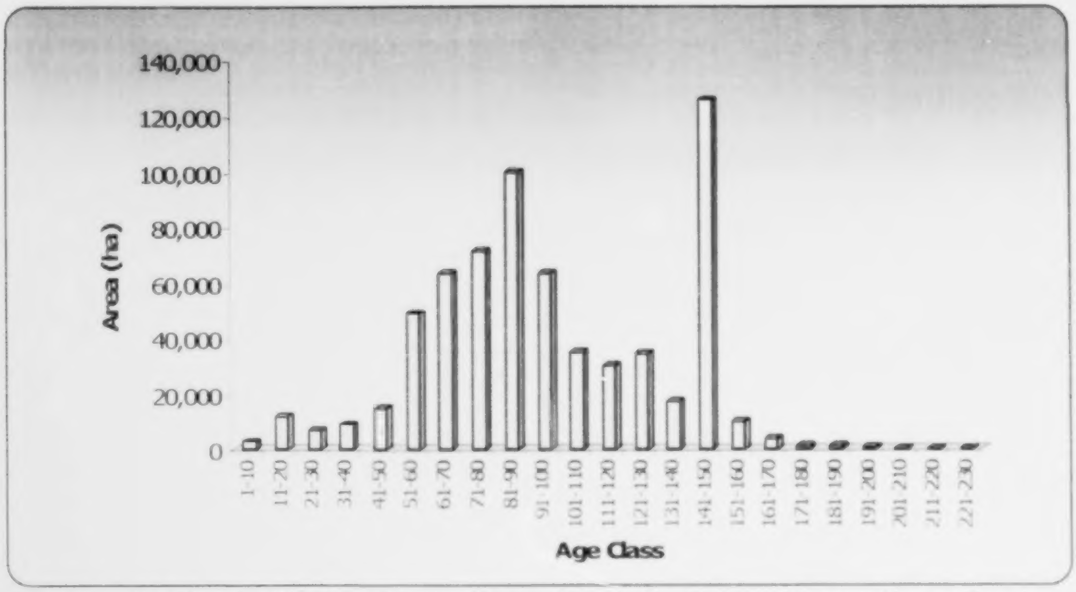

Figure 5. Age Class Distribution of Crown Managed Production Forest. (Source: Algoma Forest 2005-2010 FMP)

2.2.3 Issues Impacting Forest Management

The IFAPP requires a review of High Priority Aspects (HPAs) of the auditees' systems or activities before the site visits take place. HPAs can include significant management challenges that are inherent to the Forest (e.g., presence of woodland caribou), or can be specific issues that have arisen during forest management planning or plan implementation (e.g., conflicts with other forest users over proposed forest management activities).

The audit team assembled a list of potential HPAs from a review of the FMPs, the previous IFAs of the Forest, and discussions held with representatives of both Clergue and MNR. Based on this information the following HPAs were identified for the audit:

- management of the diverse ecology across the amalgamated Forest,
- high proportion of hardwood pulpwood compared to hardwood sawlogs and strategies for utilizing hardwood pulpwood,
- management of a small remnant woodland caribou population on Lake Superior west of Wawa, and
- access policy direction.

The audit team examined these aspects during the course of the audit and they are referred to in the body of this report in varying detail.

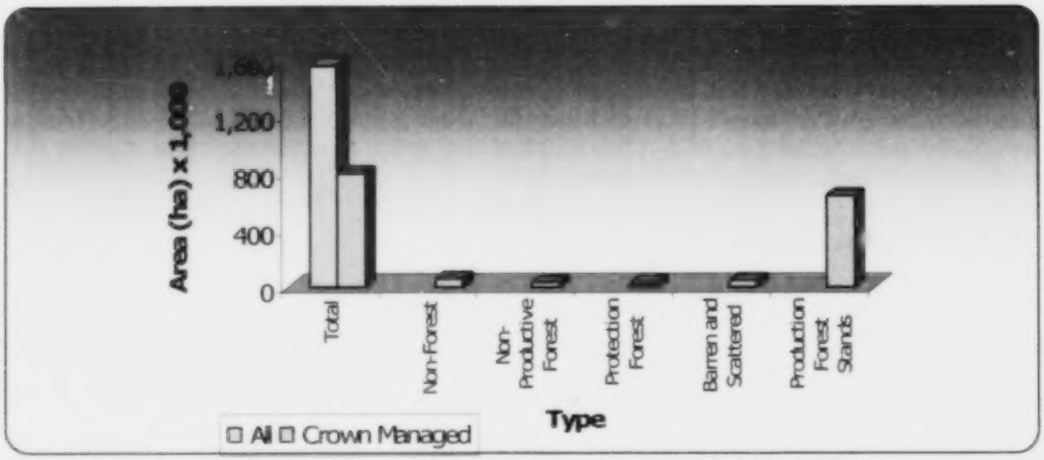

Figure 3. Forest Area by Land Type. (Source: Algoma Forest 2005-2010 FMP)

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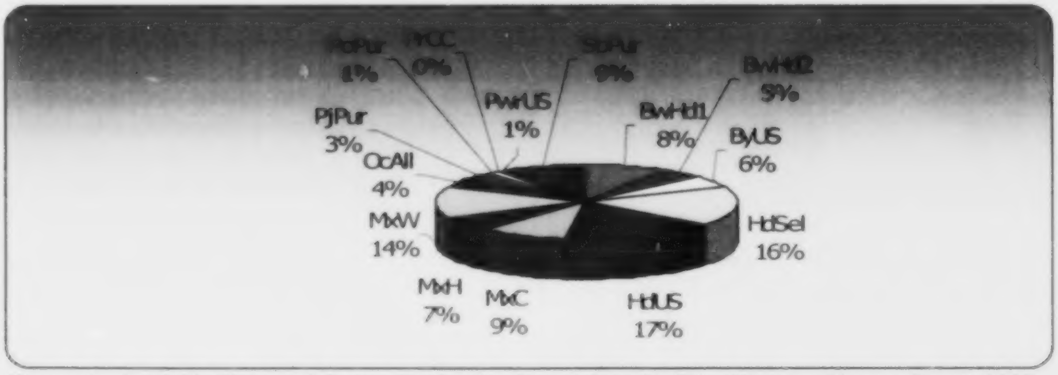

Figure 4. Available Managed Crown Productive Forest Area by FU. (Source: Algoma Forest 2005-2010 FMP)

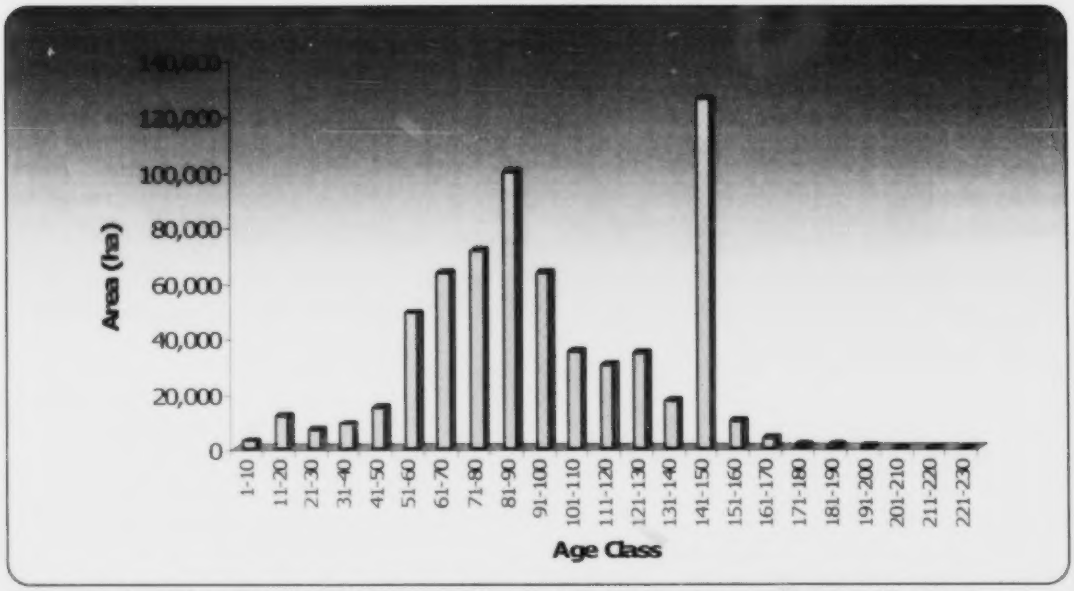

Figure 5. Age Class Distribution of Crown Managed Production Forest. (Source: Algoma Forest 2005-2010 FMP)

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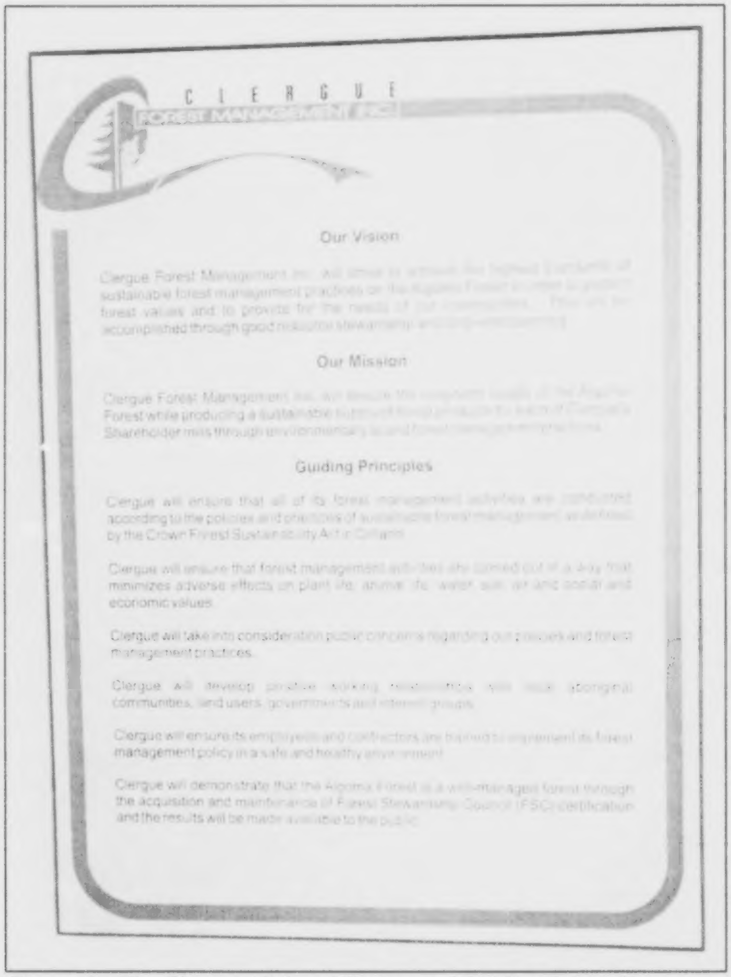
- management of the diverse ecology across the amalgamated Forest,
- high proportion of hardwood pulpwood compared to hardwood sawlogs and strategies for utilizing hardwood pulpwood,
- management of a small remnant woodland caribou population on Lake Superior west of Wawa, and
- access policy direction.

The audit team examined these aspects during the course of the audit and they are referred to in the body of this report in varying detail.

3.0 Summary of Audit Findings

3.1 Commitment

Both Clergue and MNR demonstrated a commitment to adhere to the rules and regulations governing forest management activities, through their compliance planning, training, and certification of inspectors. There is a good working relationship between MNR and Clergue and a commitment to resolve differences through effective communications and joint field trips.



CLERGUE

Our Vision

Our Mission

Guiding Principles

Figure 6. The Clergue Vision, Mission and Guiding Principles.

Clergue also developed a Mission Statement and an Operations Manual to provide corporate guidance and direction for partner shareholders. One of Clergue's guiding principles (Figure 6) includes a commitment to practice sustainable forest management.

3.2 Public Participation

3.2.1 Local Citizens Committee

Both LCCs were active and effective during the audit period and both met with the audit team and participated in the field audit. Thus, the LCC advisory role for forest management planning on the Algoma Forest was fulfilled through the Algoma and Wawa LCCs in Sault Ste. Marie and Wawa respectively. While both LCCs serve the same purpose, they operate under separate Terms of Reference and are quite different in size and diversity of membership.

The Sault Ste. Marie LCC has a large and active membership (15 members) with good stakeholder representation. The Wawa LCC membership is smaller (nine members) and limited in diversity of stakeholder interests. Access was a predominant interest among members of the Wawa LCC.

The Terms of Reference and membership of all LCCs formed under the FMPM was to be reviewed by their District Manager by March 1, 2005 to ensure conformance with the 2004 FMPM. Sault Ste. Marie District reviews their membership every year and therefore satisfied this requirement. A review of the Wawa LCC membership, as outlined in the phase in requirements of the 2004 FMPM, was delayed pending a review of District LCC needs.

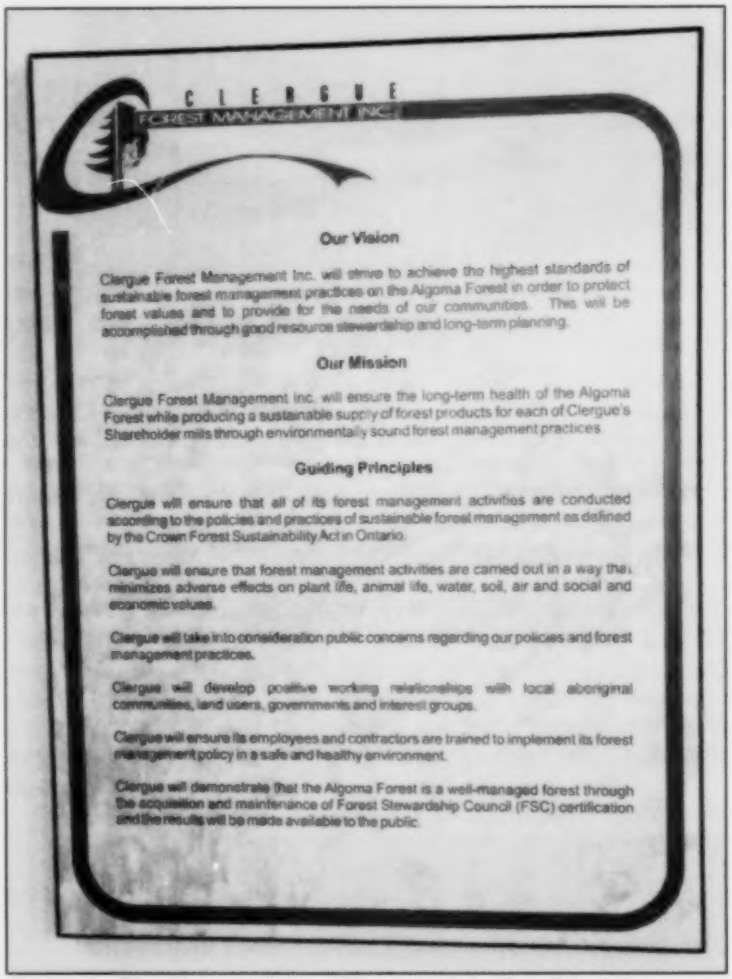
Stakeholder representation on the Wawa LCC during the audit period was lower than planned with seven of 15 interests identified in the Terms of Reference being represented. Wawa MNR attempted to recruit new members on two separate occasions, but had very limited success. Table 2 provides a summary of the current LCC

3.0 Summary of Audit Findings

3.1 Commitment

Both Clergue and MNR demonstrated a commitment to adhere to the rules and regulations governing forest management activities, through their compliance planning, training, and certification of inspectors. There is a good working relationship between MNR and Clergue and a commitment to resolve differences through effective communications and joint field trips.

Clergue also developed a Mission Statement and an Operations Manual to provide corporate guidance and direction for partner shareholders. One of Clergue's guiding principles (Figure 6) includes a commitment to practice sustainable forest management.


CLERGUE
FOREST MANAGEMENT INC.

Our Vision

Clergue Forest Management Inc. will strive to achieve the highest standards of sustainable forest management practices on the Algoma Forest in order to protect forest values and to provide for the needs of our communities. This will be accomplished through good resource stewardship and long-term planning.

Our Mission

Clergue Forest Management Inc. will ensure the long-term health of the Algoma Forest while producing a sustainable supply of forest products for each of Clergue's Shareholder mills through environmentally sound forest management practices

Guiding Principles

Clergue will ensure that all of its forest management activities are conducted according to the policies and practices of sustainable forest management as defined by the Crown Forest Sustainability Act in Ontario.

Clergue will ensure that forest management activities are carried out in a way that minimizes adverse effects on plant life, animal life, water, soil, air and social and economic values.

Clergue will take into consideration public concerns regarding our policies and forest management practices.

Clergue will develop positive working relationships with local aboriginal communities, land users, governments and interest groups.

Clergue will ensure its employees and contractors are trained to implement its forest management policy in a safe and healthy environment.

Clergue will demonstrate that the Algoma Forest is a well-managed forest through the acquisition and maintenance of Forest Stewardship Council (FSC) certification and the results will be made available to the public.

Figure 6. The Clergue Vision, Mission and Guiding Principles.

3.2 Public Participation

3.2.1 Local Citizens Committee

Both LCCs were active and effective during the audit period and both met with the audit team and participated in the field audit. Thus, the LCC advisory role for forest management planning on the Algoma Forest was fulfilled through the Algoma and Wawa LCCs in Sault Ste. Marie and Wawa respectively. While both LCCs serve the same purpose, they operate under separate Terms of Reference and are quite different in size and diversity of membership.

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Stakeholder representation on the Wawa LCC during the audit period was lower than planned with seven of 15 interests identified in the Terms of Reference being represented. Wawa MNR attempted to recruit new members on two separate occasions, but had very limited success. Table 2 provides a summary of the current LCC membership compared to the interests identified in the Terms of Reference. Challenges cited by the District for recruiting a more diverse Wawa LCC membership included funding, limited population, volunteer burn-out and MNR staff commitment.

Table 2. Current Wawa LCC Membership.

2006 Wawa LCC Membership	
Interests Identified in TOR	**Representatives**
The general public	
Local business	2
Labour/union organizations	
Tourism industry	1
Anglers and hunters	
Native communities	1
Mining industry	
Forest industry	3
Naturalists	
Municipalities	
Trappers and other resource users	2
Other Crown land recreationalists	
Chamber of Commerce or EDO	
Small independent loggers, unions and woodworkers	
Other interest groups	

Suggestion 1: Wawa District Ministry of Natural Resources should continue efforts to expand the membership of the Wawa Local Citizens Committee to include the interest groups identified in the Local Citizens Committee Terms of Reference and the Forest Management Planning Manual.

The LCCs appointed individuals to represent them on the planning team. The overlap between the planning team and LCCs was even more significant due to the fact that a number of forest industry staff were members of both. The LCCs participation in plan preparation was noted by the planning team and in the attendance records of open houses. In addition, the Sault Ste. Marie LCC maintains a webpage and held separate display booths during FMP open houses to increase awareness of the LCC and the Forest.

Both LCCs provided LCC Reports for inclusion in the FMP. The reports indicate that the LCCs were fully involved in the planning process and that they supported the final plan. It should be noted that the Wawa LCC report included an expression of concern over water crossing removal on tertiary roads which states, *The Wawa LCC generally supports the Algoma Forest Management Plan (2005-2025). But, the LCC is opposed to the removal of water crossings once the forest industry does not require them. This approach will have an impact on access to resources and will negatively influence both commercial and recreational activities.* This issue is discussed further in Section 3.3.7 - Operational Planning.

The LCCs were not involved in any pest management consultation, issue resolution or bump-ups as there were none during the audit term. Both LCCs and MNR see value in arranging a joint meeting between the two LCCs. While discussions have occurred over the past two years, a joint meeting has yet to occur.

3.2.2 FMP Standard Public Consultation Process

The methods used to communicate with the public were in accordance with the 1996 and 2004 phase-in requirements of the FMPM for standard public consultation. The Sault Star, Chapleau Express, Algoma News Review, and Northshore Sentinel were used for all FMP standard public consultation notices. The mailing list for the Forest contains approximately 1,200 entries and was appropriately used. Also, Clergue and MNR exceeded the FMPM requirements by using various internet, television and radio media to notify the public.

The audit team reviewed the comment sheets submitted at public meetings and noted that a number of them were related to the understandability and usefulness of the information presented. Five attendees reported that the displays were effective and that the open house was well done. Three respondents stated that the maps presented were difficult to read or understand and that some values should be more clearly marked or labelled.

There were no issue resolution requests or individual environmental assessment (EA) requests during the planning process for the 2005-2010 Algoma FMP.

3.2.3 Native Peoples Consultation

The CFSA and FMPM require opportunity for Aboriginal input and involvement in the forest management planning process. Native communities have the option of participating in the regular public consultation process or choosing the additional consultation referred to as the Forest Management Native Consultation Program, (FMNCP). Through this process the MNR District Manager contacts members of identified Indian Reserves, Band Councils, Treaty Organizations, and Tribal Councils regarding forest management planning in their area. Where the First Nation community has opted for their own process, notices are to be advertised in Native media and in the appropriate Native language if requested by the Native community. The FMPM also requires that MNR develop a Native Background Information Report as well as a report on the Protection of Identified Native Values.

There are seven First Nations on or adjacent to the Algoma Forest: Michipicoten, Chapleau Ojibway, Missanabie Cree, Mississauga, Thessalon, Garden River, and Batchewana. Letters were sent by the Wawa District office to Michipicoten First Nation, Missanabie Cree First Nation and Chapleau Ojibway First Nation. The Invitation to Participate was sent by the Sault Ste. Marie office to Mississauga First Nation, Thessalon First Nation, Garden River First Nation and Batchewana First Nation. In addition, First Nation communities were invited to sit on the planning team. Four First Nation communities decided to participate in their own FMNCP.

Stages Two and Three FMP notification requirements were met and although evidence that the notices were not required in the Native language could not be found, MNR staff advised the audit team that it was noted at a planning team meeting that the Native language notices were not required. Four First Nation communities held the First Information Centre while three of the four communities carried on with the second information centre as planned. Sault Ste. Marie District office did not have all the notices filed in the First Nation Documentation binder for the 2005-2010 FMP, but later provided the notices to the audit team. The same office was not able to produce evidence that notices were also sent to the Ontario Native Affairs Secretariat (ONAS), as required. Wawa District produced a letter as evidence for their part.

Suggestion 2: Sault Ste. Marie District Ministry of Natural Resources office should ensure that a cross reference be made in the First Nation Documentation binder if information is filed elsewhere.

Funding was provided by MNR to both Michipicoten and Mississauga First Nations in order to collect values information and to participate in the preparation of the Draft Native Background Information Report. The North Shore Tribal Council produced the Draft Native Background Information Report for Thessalon First Nation.

In addition to consultation opportunities for native communities to participate in the preparation of the FMP, *MNR District Managers are to conduct negotiations with native communities at the local level in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through* *forest management.* In this respect, both the Wawa MNR and Sault Ste. Marie MNR have shown effort through meetings with First Nations on the Algoma Forest. Clergue also participated in these meetings and in some instances took a leadership role. During the last two years of the audit term Wawa MNR had several discussions with Michipicoten First Nation regarding harvesting opportunities and has assisted with the development and review of a Forestry Business Plan for harvesting. Positive progress has been slow due to lack of training and staff turnover at the band office. Some line cruising was completed in 2003 to establish species and allocations potential on the Forest.

MNR facilitated a Forestry workshop in Wawa in March of 2005 for all First Nations in the District to discuss current issues related to forestry and First Nations. Throughout the term of the audit, staff from both offices attended Cultural Awareness Sessions led by Michipicoten and Mississauga First Nations. Funding for these sessions was provided by MNR. Sault Ste. Marie District had aboriginal summer students in their employ as well as scalers. In addition, Sault Ste. Marie District provided funding for a Deputy Conservation Officer for Mississauga First Nation. Discussions have occurred with Garden River First Nation regarding harvesting and allocation of Crown timber. As well, there have been meetings with members of Batchewana First Nation in regards to yew harvesting. A First Nation Liaison position was created in 2002 to work with the First Nations located in the Sault Ste. Marie District to increase communication and mutually beneficial opportunities.

3.2.4 Annual Work Schedules Public Inspection

All requirements for public notice of AWSs were met. There were no insect pest management activities reported during the audit period.

3.3 Forest Management Planning

3.3.1 Planning Team Activities

A review of the planning team minutes and Terms of Reference and interviews confirmed that the Algoma planning team was effective and provided adequate input to the planning process for the 2005-2010 Algoma Forest FMP. Planning team members interviewed expressed some concerns over geographical representation and expertise on the planning team. The planning team included one member from the Wawa MNR office, but did not include a biologist or forester from the Wawa District. There was limited strategic forest management model (SFMM) experience among District MNR members on the team and SFMM input was provided by Clergue staff and MNR staff outside of the planning team. Regional SFMM input was offered later in the planning process.

Recognizing that the Wawa District manages approximately 40% of the Algoma Forest, the audit team feels that planning team members concerns over geographical representation and expertise on the planning team are important. This situation may have contributed to the problem of having new objectives and values identified during Draft Plan review rather than at an earlier stage in the planning process. This situation is discussed further in Sections 3.3.7 and 3.3.9.

Recommendation 1: The Ministry of Natural Resources must ensure that the Algoma Forest planning team includes appropriate geographical representation and expertise for all resource management issues.

The planning team followed the FMPM requirements for planning and public consultation, but several deviations from the timelines specified in the Terms of Reference occurred. These were documented and reasonable and the final plan start-up was delayed by only one week.

The planning team used adequate means to communicate with the public during the planning period including extensive advertising campaigns. Public information centres were well attended. Over 200 individuals attended the second information centre in Sault Ste. Marie. Public inquiries and requests for meetings were well documented and each one was handled by the plan author or a designated planning team member(s).

Interviews with MNR and SFL staff and individual stakeholders, as well as a review of planning team records, indicated that the planning team had provided adequate opportunity for stakeholder input to the plan and that stakeholder input was considered in the development of the plan. Dissenting opinions among team members were considered and addressed.

3.3.2 Resource Stewardship Agreements

The Ministry of Tourism, Culture & Recreation (MTR) provided Clergue with a preliminary list of resource-based tourism (RBT) establishments in the area. Since MTR records are not linked to SFL boundaries, the list included all RBTs in the general area, including those on private land. MNR then corrected and updated the list and Clergue mailed registered letters to the RBT operators inviting them to express their interest in negotiating a Resource Stewardship Agreement (RSA). Twelve of the more than 100 RBTs contacted expressed initial interest in pursuing RSAs. Four of these remained interested and met with Clergue. Three RSAs were signed and one remains in progress.

The 2005-2010 Algoma Forest FMP included the required statement that, *the terms of any RSA do not bind or limit the Minister's right to make land use decisions for Crown land in Ontario*. The FMP also included the required statement confirming the commitment to maintain the viability of the tourism industry by protecting tourism values through the application of the Management Guidelines for Forestry and Resource-Based Tourism[5] and the use of RSAs as one method of protecting and sustaining these values.

Interviews with Clergue staff and RBT operators identified a general satisfaction with the RSA process and the protection of tourism values on the Algoma Forest.

3.3.3 Sources of Direction

During the production and implementation of the 2005-2010 FMP numerous sources of direction were used by the planning team. These sources include required provincial legislation, MNR policies and guidelines, strategic direction and land use plans. Examples of other specific sources of direction used by the planning team include:

- A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems for Ontario[6] (OMNR 1995)
- The Wetlands Policy[7]
- Prescription Advice Note on Cultural Heritage Areas of Concern[8] (November 2004)

The conservation strategy for red and white pine ecosystems was not identified at the Invitation to Participate as required, but was addressed in the FMP by the planning team. It was listed as a source of direction in the approved plan.

Operations approved in the 2000-2005 and 2005-2010 FMPs were documented in the appropriate AWS. Over twenty sites were viewed during the field audit. The activities observed were consistent with directions in the FMP.

3.3.4 Introduction to the Forest Management Plan

The forest management planning team must consider how the FMP will address MNR's Statement of Environmental Values[9] (SEV). The SEV briefing note was prepared and signed for the 2005-2010 FMP as required. The index to the EA[10] components of the plan was also included in the FMP as required.

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[5] Forest Management Branch. 2001. Management Guidelines for Forestry and Resource-based Tourism. Ont. Min. Nat. Res., Queen's Printer for Ontario, Toronto, ON.

[6] Ministry of Natural Resources. 1995. A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems for Ontario. Toronto: Queen's Printer for Ontario.

[7] Ontario Ministry of Natural Resources and Ontario Ministry of Municipal Affairs. 1992. Wetlands: A Statement of Ontario Government Policy Issued Under Authority of Section 3 of the Planning Act 1983. Toronto.

[8] Ministry of Natural Resources. 2004. Prescription Advice Note on Cultural Heritage Areas of Concern (November 2004). 6 pp.

3.3.5 Management Unit Description

The 1995 forest resource inventory (FRI, 1994 photography) was used as the basis for the planning inventory. It was approved for use before the Invitation to Participate. The planning inventory assumed all eligible stands from the 2000-2005 FMPs would be depleted. No accruals were forecast for the last two years of the plans. This resulted in a slightly conservative estimate for the new available harvest area (AHA).

The description of the formation of land types, geology, climate, soils and sites in the 2005-2010 Algoma Forest FMP was thorough and complete. It described how these factors have implications on forest management practices and decisions in the plan including silvicultural ground rules (SGR). It also provided a description of how the Algoma Forest is divided according to its various eco-regions, site regions, and site districts, and the associated tree species found within those site districts.

The historic forest condition described the original forest types and natural processes such as fire and insect damage. This section was well done. The influence of past logging practices, particularly high-grading and clear-cutting without adequate renewal, was described. The impact of sulphur dioxide emissions in Wawa and the resulting fume kill or tree-less area was also discussed, as was the impact of past forest disturbances as they pertain to the FMP were also outlined.

The current forest description was complete and met requirements. The plan contained the necessary tables and detailed descriptions of:

- area of managed Crown forest available for timber production,
- landscape pattern and forest diversity indices,
- habitat for selected wildlife species, and
- landscape processes.

The socio-economic profile was presented in the FMP in two sections. The Demographic Profile presented profiles of individual communities impacted by the wood flow from the Algoma Forest and were based on 2001 Census data. The Economic Environment section included industrial and non-industrial users of the Forest and presented individual profiles and discussions of investment intentions. The results of a survey mailed to 70 tourist operators was also presented.

The FMP provided a complete listing of rare, threatened, endangered, provincially significant and regionally significant mammals, birds, amphibians and plants which occupy the Forest. Areas within the Forest occupied by several of these species (e.g. woodland caribou, wood turtles, peregrine falcon nest sites, red shouldered hawk) were known and operations were modified or prohibited in the vicinity of these known values.

The plan provides the current non-spatial habitat status of 23 wildlife species as well as a spatial analysis of habitat for moose, white-tailed deer, marten, red-shouldered hawks and pileated woodpecker. The spatial analysis of habitat was conducted to provide the planning team with an idea of where the current habitat for these five species was so that forest management activities could be modified in those locations when necessary.

One of the indicators of sustainability examined during the SFMM modelling was wildlife habitat. It is an FMPM requirement that the selected management alternative cannot threaten wildlife habitat for selected species at the eco-regional scale. The audit team noted that 16 of 23 wildlife species on the Forest were projected to experience habitat declines in seasonal or year round habitat under the selected management alternative once the desired future forest condition is reached; 30% of the species showed habitat declines of 25% or more. There was no eco-regional analysis of wildlife habitat status for the 23 regionally selected species to provide

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[9] Ministry of Natural Resources. 1995. Statement of Environmental Values.' Toronto: Queen's Printer for Ontario.

[10] Ministry of the Environment. 2003. Declaration Order regarding MNRs's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario. 48 pp.

context for the habitat conditions for these 16 species on the Forest, as required by the FMPM. This is an analysis that should be conducted by MNR regional staff.

Recommendation 2: Corporate Ministry of Natural Resources must ensure, when a selected management alternative causes significant loss of habitat for a species in the context of the forest management unit, that the habitat implications are examined for that species at the eco-regional scale.

The High Potential Cultural Heritage Value predictive model run was conducted for the 2005-2010 Algoma FMP. However, the planning team was unaware at the time of the interpretation note: MNR Confirmation of High Potential Cultural Heritage Values Identified[11], which was to be used with the Heritage Assessment Tool (HAT) predictive model. This note provided direction for netting down high potential cultural heritage values identified by the HAT model based on distance from waterways, steep topography, etc. After guidance from the interpretation note (received in May 2005) was applied, a number of areas were determined to be no longer high potential and an amendment to the FMP was made.

3.3.6 Objectives and Strategies/Management Alternatives

Objectives and targets were included in the 2005-2010 FMP to address forest diversity, social and economic matters, provision of forest cover and silviculture as required by the CFSA and FMPM. The objectives adhere to principles expressed in provincial as well as local direction. Strategies relevant to the management unit were included to support objective achievement.

A comprehensive range of management alternatives was considered in the FMP including the three mandatory management alternatives required by the FMPM to determine the Forest's theoretical timber production potential. Four additional alternatives were also analyzed in the plan. These alternatives included one with non-declining yields through time (MNR region recommended), one illustrating ecological priority (developed by the planning team), one illustrating timber production priority (developed by the planning team) and a fourth alternative, later selected for implementation, was investigated by the planning team that provided a more balanced consideration for all objectives.

The above management alternatives were compared to the Natural Benchmark Scenario (NULL with fire) to assess forest sustainability and determine estimated bounds of natural variation. In addition, another natural benchmark was developed to see the effects of not harvesting any timber, but controlling fire as can be expected by the provincial government (NULL without fire). A reasonable and comprehensive set of objectives and targets were determined for the FMP, varied for each management alternative and logically incorporated into the SFMM modelling.

The range of management alternatives identified in the plan addressed FMPM requirements and satisfied the planning team and LCCs. The entire suite of management alternatives were presented to the Sault Ste. Marie and Wawa LCCs for review and comment. The LCCs generally supported the management alternatives included in the 2005-2010 FMP.

The FMP management alternatives were analyzed through the use of SFMM, with results documented in the plan for all alternatives. Electronic SFMM files were provided to the audit team for inspection and verification. The FMP included good background information for some SFMM modelling inputs (i.e. yield curve development, silvicultural strategies), but was minimal or lacking in development information for other inputs (i.e. areas reserved from harvesting, unharvested volume percentages). Where documentation was lacking the audit team was unable to confirm that the best available information was utilized for all modelling assumptions. More complete analysis documentation in the form of an Analysis Package is a requirement of the FMPM (2004) applicable to the 2010-2020 FMP, therefore a Recommendation is not warranted.

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[11] Ministry of Natural Resources. 2004. Confirmation of High Potential Cultural Heritage Values Identified with the Heritage Assessment Tool (H.A.T.) predictive model. Interpretation Note. November 2004. 5 pp. + Appendices.

The SFMM modelling for the 2005-2010 FMP was generally well structured. Some instances in the SFMM modelling were noted where improvements could be suggested for the 2010-2020 FMP in order to better represent operational practices or reduce constraints in the model. These instances and associated Suggestions are further explained in the following paragraphs.

Accumulating reserve areas and unharvested volume percentages were included in the strategic modelling, but no background information was included in the plan to justify the levels used. The combination of reserved area and volume reductions may be higher than required to account for natural disturbance pattern residual area (Natural Disturbance Pattern Emulation Guide, NDPEG[12]), wildlife habitat guidelines and operational bypassed areas. These inputs should be reviewed and revised during development of the 2010-2020 FMP base model with supporting documentation to justify the levels chosen.

Constraints were included in the strategic modelling to limit the change in harvest area by FU between terms to approximately +/- 25%. This limitation serves to significantly dictate the AHA through time, especially in FUs that have smaller productive areas or uneven age class distributions. It is suggested that these harvest area stability constraints by FU be relaxed or eliminated for the 2010-2020 FMP. This will allow for a more natural fluctuation of harvest area by FU in accordance with the age class structure of the FU.

No renewal limits used were included in the strategic modelling to reflect ecological limitations to renewal treatments. Only two renewal limitations were included in the modelling to reflect management decisions in Term 1 for the selected management alterative. Strategic renewal limits based on biological site limitations to forest renewal are recommended to limit the SFMM model from solving with unrealistic renewal projections. These ecologically-based constraints to renewal treatments may also allow fewer constraints to be necessary in other areas of the modelling. The audit team suggests that minimum and maximum limits on renewal should reflect ecological site limitations in the base model for the 2010-2020 FMP, and can be expanded to include additional management decisions in the selected alternative (called Proposed Management Strategy in 2010-2020 FMP).

Suggestions directed at the 2010-2020 FMP strategic modelling are summarized in one Suggestion below.

Suggestion 3: During preparation of the 2010-2020 Forest Management Plan, Clergue should:

a) review and revise unharvested volume proportions and accumulating reserve assumptions to adjust for existing reserves and NDPEG residual target percentages at the disturbance level,
b) revise harvest area forest unit stability constraints to allow flexibility in projected harvest areas which may enhance socio-economic benefits from the forest, and
c) revise forest renewal limits by proportion for the base model to reflect biological/ecologically based limitations. Expand renewal limits in the Proposed Management Strategy to include additional management decisions if warranted.

The FMP provided a very good discussion of the assessment of forest sustainability and objective achievement for all management alternatives. Three management alternatives were analyzed and deemed to be not sustainable. Four additional alternatives analyzed by the planning team all passed the test of forest sustainability and achieved objective target levels to varying degrees. Overall, alternative AL_SMAV4a ranked highest when all objective targets were assessed through the short-term and long-term, and after consideration of socio-economic analysis. The FMP text included a detailed discussion on the relative ranking of management alternative results. The FMP included clear rationale in support of the choice of AL_SMAV4a as the selected management alternative for implementation in the FMP. SFMM modelling, analysis and documentation supported sustainable forest management for the selected management alternative. The analysis of management alternatives was accurately documented in FMP text, tables and appendices with only minor variances due to rounding. The documented AHA by FU was consistent with the outputs from the SFMM modelling and was accurately documented in the FMP text and tables.

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[12] Ministry of Natural Resources. 2002. Forest Management Guide for Natural Disturbance Pattern Emulation. Queen's Printer for Ontario. 24 pp. + Appendices.

The Algoma planning team reviewed the results of the socio-economic impact model (SEIM). The Algoma LCC records indicate that the LCC discussed SEIM. Wawa LCC minutes and staff interviews did not confirm LCC review of SEIM, but did confirm LCC review of the analysis of management alternatives. MNR staff expressed concern over the lack of detail in past LCC minutes and have taken steps to correct this situation.

Eligibility criteria for harvest, renewal, and tending were stated in the FMP and were consistent with lower operability ages included in the strategic modelling, except ByUS and HdUs FUs. They were referenced at 80 years operability in the text, whereas SFMM used 100 years for both FUs' minimum operable ages.

During the audit, the audit team observed that the 2005-2010 FMP did not provide a complete description of eligibility criteria for harvest, renewal and tending. Natural disturbances were not referenced as eligible for consideration for harvest. No specific renewal or tending eligibility criteria were documented other than minimum harvest age. No reference was made to silvicultural treatment of recent harvest, recent natural depletions, backlog barren and scattered areas, or cleaning of overstocked juvenile stands. Some of these criteria were included for operational selection criteria, but areas cannot be selected if they are not eligible to be selected for operations.

Harvest and renewal areas were illustrated on eligibility maps, but recent harvest and backlog areas were not stated in the renewal and tending eligibility criteria in the 2005-2010 FMP. Since completion of the field audit, an amendment was submitted by Clergue and approved by MNR in October 2006 to correct the oversight in renewal eligibility criteria. Corrective action has already occurred, and no Recommendation for further action is required.

3.3.7 Operational Planning

AOC planning begins with the timely identification of values (e.g., wood turtle habitat, moose aquatic feeding areas, raptor nest sites, etc.) in areas proposed for forest management. The collection of values information is MNR's responsibility although it is industry's responsibility to promptly report unidentified values encountered during operations. New values are entered into the Natural Resource Values Information System (NRVIS), which MNR maintains. A values map is produced from this data base which is used when forest management activities are planned. This map ensure potential adverse impacts are minimized on values located close to operations.

The collection of values information is conducted on an MNR district basis. In the case of the Algoma Forest, both Wawa and Sault Ste. Marie Districts were responsible for collecting these data for the areas proposed for operations by the SFL within their jurisdictions. Wawa District conducted winter stick nest and moose habitat aerial surveys in 2004, but as the District was under-funded, only about half of the proposed areas of operation were flown and the results of the surveys were not incorporated into the values map used for AOC planning. Moose aquatic feeding areas (MAFA) were identified from aerial photographs but not all of the proposed allocations were checked. Since the aerial photos were 12 years old some MAFAs no longer existed and new ones had developed because of water level changes. This necessitated some verification flying, a limited amount of which occurred in 2005 after plan approval. It is important that values information be current for planning.

Recommendation 3: Corporate Ministry of Natural Resources must provide:
a) sufficient funding for Wawa District to collect and provide verified values information (MAFAs, stick nests, etc), and
b) a high potential cultural heritage value model run in a timely manner to facilitate input into the 2010-2020 Algoma Forest management planning process.

Sault Ste. Marie District conducted MAFA and stick nest surveys in the summers of 2002 and 2003. Winter surveys were also conducted to verify old bald eagle and osprey nest site information. Wood turtle surveys were conducted on waterways near proposed areas of operations which had the potential to provide habitat for this endangered species. While the other values information was entered onto the values map, the wood turtle survey results were considered too sensitive to be displayed publicly on the values map. Clergue and Sault Ste. Marie District have worked out a system whereby sensitive values information (e.g. wood turtle habitat, peregrine falcon nest sites) is entered onto operations maps at the AWS stage. The electronic data base system maintained by the District biologist stores the information by map sheet and is easily queried during AWS review for sensitive values in the vicinity of proposed operations. The audit team is satisfied that this system, while somewhat unconventional, is working and protecting the sensitive values adequately.

The collection of information on native values to ensure their protection during forest management operations is a requirement of the FMPM. Wawa District updated native values for the Michipicoten First Nation but the Missanabie-Cree chose not to participate in the special native consultation process. However, values of interest to this First Nation on the Algoma Forest had been updated during planning for the 2004 Magpie Forest FMP. In Sault Ste. Marie District native values for the Batchewana, Thessalon and Mississauga First Nations were updated but the Garden River First Nation chose not to provide updated values information.

Many of the harvesting operations on the Algoma Forest, particularly in Sault Ste. Marie District are selection and shelterwood systems which require tree marking. It is the responsibility of tree markers to check trees for raptor stick nests and cavity (wildlife) trees which they then mark for retention and, in the case of nest sites for many species, report to MNR. The audit team saw evidence (i.e. marked trees containing nests, many nest sites reported by markers to MNR) of such marking with one of the two operators conducting selection marking. However, working in similar stands, the other operator's marked stands showed no evidence of marked nest sites and MNR had not been notified of any nests discovered by this operator's tree markers. It is improbable that no raptor nests existed in the hundreds of hectares of marked stands this operator conducted operations on over the five-year period.

Recommendation 4: Clergue must review tree marking requirements with their contractors as they relate to nest and cavity tree identification and retention.

Recommendation 5: Clergue must ensure compliance to requirements for reporting new values encountered and recognized during the implementation of forest management operations.

Once new values are identified they must be entered into the NRVIS database to ensure that MNR's values map is current for planning purposes. The audit team checked a number of new and amended values identified by MNR and contractors (nest sites) and determined that all the values had been properly stored in the electronic data base. The auditors have noted a steady improvement in NRVIS over the last five years with respect to the length of time required for entry of new values or changes to existing values in the system.

Where values were identified which could be adversely affected by forest management activities, specific prescriptions were applied within AOCs. Since the Algoma Forest is in the transition zone from GLSL forest types in the south to boreal conditions in the north, different prescriptions were applied for the same value depending on the silvicultural system applied in the area where the value was found (e.g. heronries, MAFAs).

When a guideline provided specific direction (e.g. reserve/modified cutting adjacent to waterbodies), that direction was provided in the prescription. When specific direction for protection of a value was not included in a guideline, different prescriptions were developed. The audit team noted that alternatives were not identified in the supplementary documentation for these prescriptions. There could be good reasons for this; for example, a prescription for a cottage lake may have been developed in a previous plan through negotiations with the cottagers and was just carried forward into the new plan. However, a new plan author and planning team may consider an allocation on that same lake in a future plan and may not understand how the prescription was developed, what different alternatives were considered, etc. unless it is captured in the rationale for the selected prescription.

Recommendation 6: Clergue must review the Area of Concern supplementary documentation in preparation for the 2010-2020 Forest Management Plan for prescriptions for which there is no guideline or the guideline does not give specific direction for the protection of a particular value, to ensure there is the consideration of alternatives in the development of the final prescription or a rationale as to why there was not.

A small group of about a dozen woodland caribou have existed along a stretch of the Lake Superior shoreline in the northwest corner of the Algoma Forest for a number of years. Periodic winter surveys have confirmed their presence in the past although in the last few winters no evidence of these animals has been found. There are no harvest allocations close to the areas where these caribou were seen in the past. The question of whether this band of habitat along Lake Superior is important for the recovery of this threatened species will have to wait for the Approved Provincial Recovery Strategy which should be available for consideration in the next Algoma FMP.

Table FMP-17 (2005-2010 FMP) lists the prescription to protect osprey nests as an exception in that it permits clearcutting in the modified portion of the protective buffer. A monitoring plan was developed and included in supplementary documentation.

The development of access through the primary and secondary road construction proposed in the plan was consistent with plan objectives and development of the Forest over time. Two primary road corridors (Hoppy Lake and Loop Lake) were considered during the development of the 2005-2010 FMP. Neither primary road proposal considered alternative corridors as topography was limiting. A number of secondary road corridors were identified in the 2005-2010 Algoma FMP and for many of them alternate corridors were not identified because the secondary road was to be built on an existing tertiary or old secondary road bed, or topography was too limiting to consider an economical alternative.

As is the case with other SFLs, Clergue's access planning is challenging on the Algoma forest because of user conflicts and access restrictions from other planning exercises (i.e. Sault Ste. Marie and Wawa District Land Use Plans, Crown Land Use Atlas). Compounding the problem is the lack of a comprehensive access strategy developed by MNR for Crown lands in and around the SFL. It would be useful for the public and Clergue to know where MNR (and the public) believed it was important to maintain existing and proposed roads over time and where access over time was not considered important. This access strategy has been started with the development of the Crown Land Use Atlas but needs to be expanded to deal with existing road systems in this and surrounding SFLs to give the public some opportunity for input into where access will and will not be maintained. Clergue is left to develop access on the SFL's Crown land without knowledge of what MNR's plans are for road systems in areas adjacent to and within the SFL. Because of liability concerns, MNR is being forced to examine existing road networks no longer being maintained by industry or MNR and determine whether they should be maintained or physically decommissioned. This is a defacto access strategy and should be developed in a public forum.

Suggestion 4: The Ministry of Natural Resources should address strategic roads planning at scales above the Sustainable Forest Licence level in the Sault Ste. Marie and Wawa area to provide the Sustainable Forest Licence holder and other resource users an opportunity for input into a Crown Land access strategy.

If new tertiary roads were required to reach an operating block, a 500 m corridor was shown on the operations map and AOC planning was completed for the corridor. Where an AOC (e.g. a water crossing) was encountered a 100 m corridor was identified at the proposed crossing site. All new tertiary roads were planned to meet appropriate standards with the understanding that water crossings could be removed from permanent streams based on a case by case analysis of Clergue's requirement for long-term permanent access and interests expressed by other resource users. If Clergue had no need for continued access and no third party was interested in maintaining the water crossing, the water crossing would be removed unless MNR was willing to accept responsibility.

Selection criteria for harvest, renewal, and tending operations were clearly identified in the FMP. Harvest selection criteria were consistent with the areas eligible for operations. Selection criteria for renewal and tending referenced 2000-2005 FMP harvest and backlog areas which were not included in the 2005-2010 FMP renewal eligibility criteria, but were illustrated on the eligibility maps. An FMP amendment was approved in October 2006 to revise the renewal and tending eligibility criteria to include these additional areas and maintain consistency with renewal and tending selection criteria. Sites viewed during the audit met the selection criteria.

Planned harvest areas exceed 99% of the AHA and did not exceed the AHA for any individual FU. Variations in age class by FU were well documented in the text of the FMP. Difficulties in balancing the AHA and age class include historical harvesting and high-grading, fragmentation, access, and non-economic blocks. The selection of AHA at the planning stage was considered acceptable. Wood supply commitments were documented quite well in the FMP. Projected forest renewal revenues and expenditures were reasonable.

Contingency areas were identified and represented about 16% of the planned harvest area. The areas were spread across all FUs and did not exceed one year of allocation for any individual FU. Both individual stands and operating blocks were selected to ensure suitable replacement areas were available if required.

The SGRs describe the current and future forest condition, ecosite type, silvicultural treatment package (STP) and regeneration standards for a forest. The STP includes a silvicultural system with a range of acceptable harvest, site preparation, regeneration, and tending methods. Within the SGRs the preferred STP is identified and the remaining STPs for that SGR are ranked in order based on expected frequency of use. The preferred SGR is typically implemented, although one of the alternate SGRs may be substituted.

In response to the 2001 IFA, changes were made in the 2005-2010 FMP to the mixed hardwood FU (MxH) SGR to include a preferred STP of clear cutting followed by intensive silviculture including site preparation, planting, and tending as required to increase the proportion of conifer. The conifer component was lost from these stands due to past harvesting practices where large areas of white and red pine were harvested initially, then spruce and balsam fir for pulp and sawlogs. Conversion to white pine may occur on sites where white pine occurred historically. The intensive silvicultural treatment was expected to be used on 70% of the stands allocated, with the goal of creating a mixed conifer stand in the future.

The yellow birch uniform shelterwood FU was added in the 2005-2010 FMP to capture stands dominated with yellow birch and requires specific silvicultural prescriptions to maintain and increase it on the Forest. The 2001 IFA recommended that Clergue increase its use of site preparation and tending to encourage yellow birch and red oak. The use of this FU will enable Clergue to identify and manage yellow birch.

No silvicultural exceptions were listed in the 2000-2005 or 2005-2010 FMPs.

Regeneration forecasts were developed in accordance with the selected management alternative. The total area planned for regeneration in the 2005-2010 FMP was 44,002 ha and the total planned harvest area was 43,936 ha. The forecast for tending was 18,111 ha and included aerial chemical tending, ground mechanical chemical tending, pre-commercial thinning and improvement cutting.

The necessary renewal support requirements for planned operations were documented in the FMP. This included information on seed inventory and collection, and expected use and collection requirements for the five-year period. Also, a forecast of the quantities of tree seed to be collected and quantities of required planting stock was provided. Tree improvement activities, including the management of two first generation black spruce seed orchards, was described.

The FMP included a discussion of the monitoring programs to be implemented over the term of the plan. A Compliance Strategy for the Algoma Forest was prepared by Clergue. Second year survival assessments and FTG surveys were planned to evaluate the effectiveness of silvicultural treatments, the type of remedial action required, and regeneration success. FTG surveys were planned for 17,806 ha during the FMP term.

3.3.8 Plan Review and Approval

Interviews with planning team members and review of the plan indicated that the required list of alterations was incorporated in the final plan and that six planning team members were also reviewers.

For plan review the FMPM states, *The draft forest management plan must be reviewed by MNR district and regional staff. In most situations, reviewers will be familiar with the plan, having provided advice to the planning team during plan preparation.*

The audit team noted that:

- there were 35 Plan Reviewers and six of these were on the Planning Team,
- the Terms of Reference lists 23 reviewers,
- there were 12 reviewers from Wawa MNR staff, but only one of them was on the Planning Team, and
- there were 610 Required Alterations.

During interviews, several members of the planning team expressed concern over the number and nature of required alterations. The approved plan contains a summary of concerns (issues) related to plan review and the list of required alterations.

The audit team reviewed each of the 610 required alterations and concluded that many dealt with editorial requests or comments and were likely inappropriate for inclusion in the list. The final list of required alterations included 117 requested editorial changes and 287 comments or suggestions unrelated to requirements of the FMPM or guidelines. While the Terms of Reference for the Algoma Forest 2005-2010 FMP and the 1996 FMPM do not include instructions for classification of alterations, MNR training and practices suggest that editorial requests and comments or clarification requests should be labelled as such and excluded from the final list of required alterations.

During interviews, MNR staff reported that a number of editorial and comment requests were intentionally labelled as required by individual MNR staff who did not want the plan author to have a choice in accepting or rejecting their request. MNR staff also commented that some reviewers had not completed MNR training for plan review.

The final list of required alterations also included 58 requests for additions or revisions to the plan objectives and strategies. Requests for new objectives and strategies in the planning process must be presented to the planning team in a timely manner early in the planning process.

The final list of required alterations also included 55 requests involving required alterations relating to manipulation of forest cover that were not certified by an R.P.F. The FMPM states, *Required alterations relating to manipulation of forest cover must be certified by a Registered Professional Forester.*

The audit team concludes that MNR did not provide adequate training and supervision of the plan review process.

Recommendation 7: The Ministry of Natural Resources must provide adequate training for plan reviewers and supervise the review process to ensure the list of required alterations is appropriate.

3.3.9 Plan Amendments

The master lists of amendments for both the 2000-2005 and 2005-2010 FMPs were current and accurate. The full amendment records for both MNR and Clergue were also complete. MNR met the requirement to distribute all amendments to MNR regional office, MNR Forest Management Branch and MNR Toronto.

In reviewing amendments to the 2000-2005 Wawa FMP the audit team encountered an administrative amendment incorrectly labelled and described as a contingency swap. The amendment actually involved the transfer of unallocated stands into the plan. The amendment was categorized as administrative rather than minor, and no formal public consultation was involved. All other amendments involving the introduction of new stands to the Wawa and Algoma plans were labelled accurately and treated as minor amendments with formal public consultation opportunity. The audit team therefore concludes that the amendment was labelled and categorized incorrectly through an oversight.

Records indicate there were 81 amendments to the 2000-2005 Algoma and Wawa FMPs. Most of the amendments pertained to updates to NRVIS data, roads and water crossings changes, and renewal and maintenance changes and were reasonable. There were also a number of amendments dealing with contingency swaps which have raised concerns among MNR and Clergue staff. Concerns included the high frequency of contingency swaps and the workload involved in preparing and processing the associated amendments.

The audit team reviewed the approval time for each of the 31 amendments submitted to date for the 2005-2010 Algoma FMP. Approval times for most amendments were quite reasonable, but a small number appear to have taken much longer or are still outstanding. In discussion with Clergue and MNR staff, the audit team learned that most of these were associated with larger issues resulting from the planning process, such as high potential Cultural Heritage area downsizing, changes in insular NDPEG requirements, changes to residual tree requirements, and the addition of red pine to renewal and maintenance eligibility.

A significant number of amendments during the first year of the 2005-2010 FMP resulted from incomplete information or late changes in the planning process and from frequent operational contingency exchange. The workload associated with these amendments was considerable for all parties involved. A number of these amendments might have been avoided by ensuring appropriate input to the planning process such as the timely provision of values information. This issue is discussed in Sections 3.3.1 Planning Team Activities and 3.3.7 Operational Planning.

The frequency of amendments associated with contingency exchanges concerns the audit team. The FMPM states that, *During the five-year term of the plan, circumstances beyond the control of forest management (e.g., wildfire, weather) may cause some of the planned harvest area to be unavailable for harvest. In order to accommodate such unforeseeable circumstances, a contingency area for harvest operations must be identified and portrayed separately on the areas selected for operations maps. This contingency area will serve as a replacement area for harvest, and will only be used if needed.*

The frequent use of amendments to substitute contingency area for planned allocations when no unforeseeable circumstances exist is inconsistent with the intent of contingency area as defined by the FMPM. Furthermore, it creates an increased workload for Clergue and MNR staff in preparing and processing the amendments. Ten amendments occurred in the first year of the 2005-2010 FMP relating to the exchange of approved operational harvest blocks with contingency blocks.

The audit team notes that although Clergue and MNR staff have expressed concerns over the frequent use of contingency swaps and the associated workload, they have not analyzed the cause of the situation or taken steps to improve it.

Suggestion 5: Clergue and the Ministry of Natural Resources should evaluate and address the reasons for the high number of amendments involving substitution of contingency area for approved allocations.

3.3.10 Contingency Plans

There were no contingency plans during the period under review.

3.3.11 Annual Work Schedules

The AWSs were complete and consistent with the planned operations in the FMP. Most new values data were being supplied by Clergue to MNR as per the requirements of 2004 FMPM. A Recommendation is made in Section 3.3.7 - Operational Planning to address the instances of one operator's tree markers not marking and reporting nest sites in the GLSL forest types.

The 2004 FMPM requires Category 14 pit locations to be identified in the AWS. This is a new requirement and was not done for the 2005-2006 AWS. Category 14 pits have been identified in the 2006-2007 AWS.

Recommendation 8: Clergue must follow the 2004 Forest Management Planning Manual requirements for inclusion of Category 14 pits in the Annual Work Schedule.

The forest operation prescriptions (FOPs) for harvest, renewal, and maintenance operations scheduled in the AWS were consistent with the SGRs and were prepared in accordance with the FMPM. Several stands, including some of those viewed by the audit team in the field, were tracked from the SGRs in the FMP. The FOPs for these examples were completed before any operations commenced on site. Application of FOPs involves the confirmation or verification of the description of the site conditions and the preferred STP. If the site type is inaccurate, the appropriate site type and corresponding ground rule must be identified. This practice meets the FMPM requirements and is an essential part of good forestry practices. Documentation for revisions to FOPs and AWSs were included and consistent with the corresponding SGRs and FMP.

3.4 Plan Implementation

3.4.1 Areas of Concern

The audit team observed a wide variety of AOC prescriptions including those to protect moose aquatic feeding sites, broad winged hawk nesting sites, water quality and fish habitat on warm and coldwater streams and lakes, etc. AOC prescriptions followed specific direction within a guideline where it was available (e.g. Timber Management Guidelines for the Protection of Fish Habitat[13]). Where the planning team needed to devise a prescription that would protect a value where specific direction was not available in a guideline (e.g. Carpenter Lake, remote tourism lakes) the audit team's opinion was that the value had been adequately protected and the prescription was appropriate for the site conditions encountered.

The audit team observed that prescriptions were implemented as planned or modifications were covered by an amendment or compliance report detailing the difference from the planned prescription. Where AOC non-compliance was noted, they were usually minor in nature. As indicated previously in this report however, on portions of the Forest where the selection silvicultural system was being applied, the tree markers associated with some operators were failing to mark and report nest sites of woodland raptors.

3.4.2 Harvest

Harvest operations must be conducted in compliance with all current laws and regulations including the CFSA and the approved activities of the FMP and AWS. Clergue prepared a set of background information for each block which included maps, location of roads, AOC, and inspection reports. The audit team viewed a number of sites where harvest operations occurred during the audit period.

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[13] Ministry of Natural Resources. 1988. Timber Management Guidelines for the Protection of Fish Habitat. Queen's Printer for Ontario. 14 pp.

Harvest activities were appropriate for the site conditions. Minimal site damage was found during the field audit. Clergue has made significant improvements to its operations in this area. Site damage was identified as a problem which resulted in a Recommendation during the 2001 Wawa IFA. Part of this Recommendation included the development of a Standard Operating Procedure to limit site damage. This was completed.

Clergue and its partner shareholders achieved excellent results on the selection and shelterwood harvesting viewed by the audit team. The quality of retained trees demonstrated good choices by the tree markers, riparian and intermittent stream areas were protected, and damage to residual stands was minimal and limited to main skid trails.

Achieving forest management objectives using the selection system for tolerant hardwoods is dependent on markets for hardwood fibre quality products. Markets for tolerant hardwood fibre products from the Algoma Forest are challenging at best. These include:

- Approximately 70% low quality material that is large, overmature, and defective;
- Distance to markets, location of harvest, access;
- Low harvest volumes relative to boreal species;
- Sawlog companies forced to market 70% of their harvest with marginal or negative returns - products in which they have no commercial interest;
- Merchandizing hardwoods to maximize product value/volume generates numerous pieces with limited marketability; and,
- No viable market for tolerant hardwood pulpwood north of the Montreal River.

Figure 7 shows boltwood logs, pulpwood, and pieces of various lengths and sizes after merchandizing hardwood tree lengths at Boniferro's processing yard. The hardwood pieces on the bottom right do not meet conventional sizes and have limited markets at the present time.

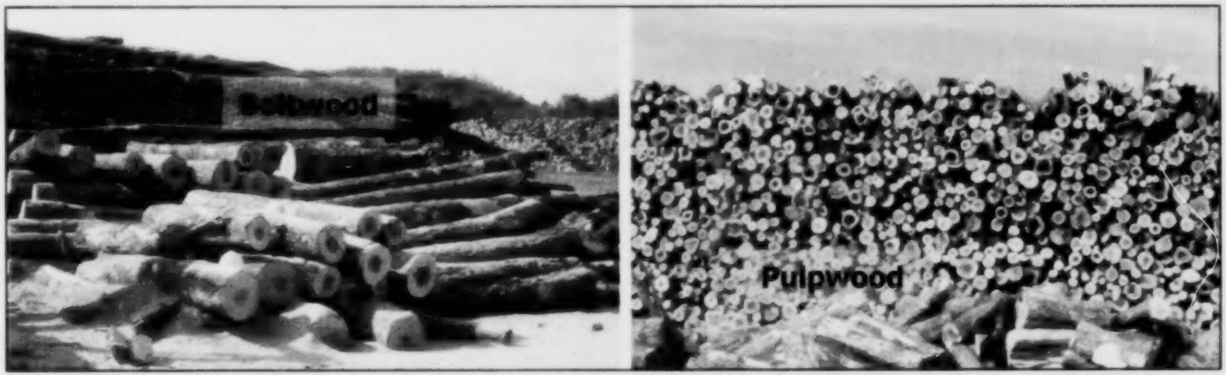

Figure 7. Low Grade Volume After Merchandizing Hardwood Tree Length at Boniferro's Concentration Yard.

Clergue and partner shareholders have undertaken several commendable initiatives in an attempt to partially address this complex and difficult issue:

- Clergue (on behalf of its partner shareholders) has secured MNR approval for the export of tolerant hardwood fibre products to the US. This term of this approval is five years which allows Clergue to negotiate longer term contracts. Approximately 6,000 cubic metres of tolerant hardwood fibre products originating from North of the Montreal River were delivered as of the date of the audit.
- Clergue partner shareholder (Boniferro):
  - Added a scrag type saw to more efficiently utilize and manufacture low grade hardwood logs. This has increased hardwood sawlog recovery from 30% to 40% and decreased the percentage of fibre material that must be marketed elsewhere, and

  - set up a tree length processing yard near Sault Ste. Marie in cooperation with one of their contractors.
- Clergue partner shareholders have increased mechanical harvesting and capacity to more fully utilize the AHA and achieve economies of scale operations.

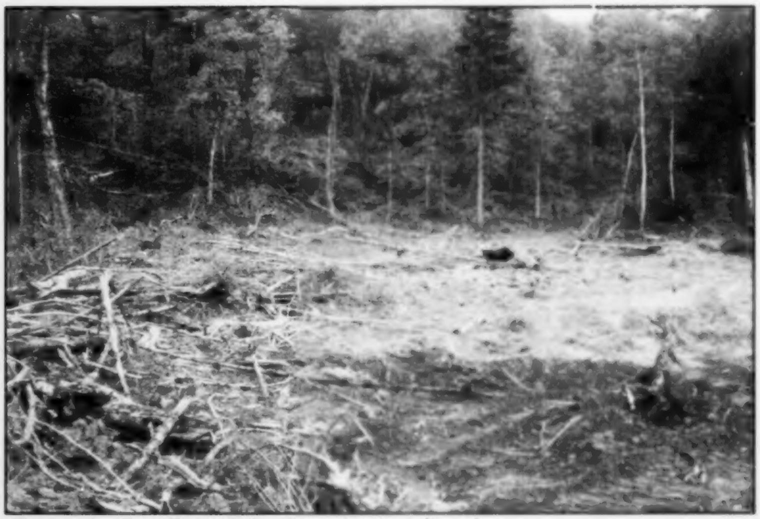

Figure 8. Excellent Utilization at a Landing Area.

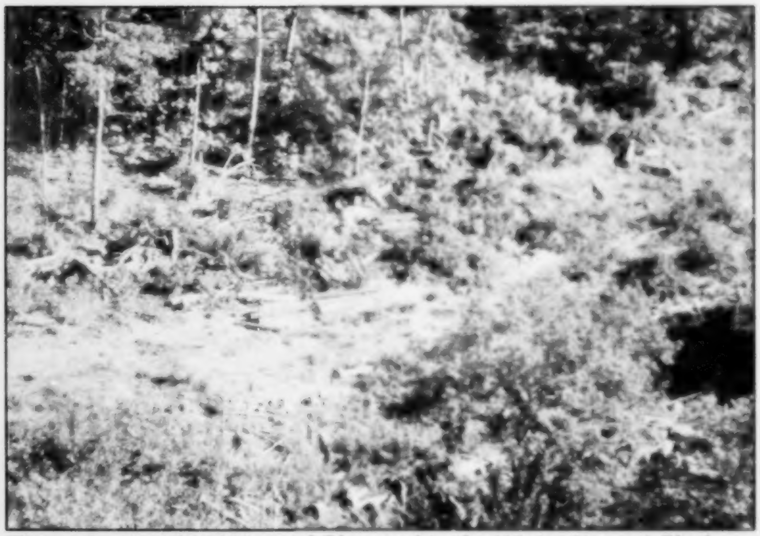

Figure 9. Unutilized Material Observed in the Winter Harvest Block (Whitman Township).

The audit team found utilization practices were generally quite good throughout most of the field portion of the audit. The landing area shown in Figure 8 is an example of excellent utilization.

There was one exception to the good utilization practices noted during the field audit. Ground checks on a winter road portion of a harvest block in Whitman Township found 26 merchantable tree lengths and 2.5 metre length pieces left on site. This was in addition to pieces resulting from merchandizing hardwood tree lengths and oversize material. Aerial observations indicated numerous other pieces were left on site. Neither Clergue (including partner shareholders) nor MNR reported this on forest operations inspections. Approximately 10% of the winter road was ground checked by the audit team. The harvest block is two to four-years old and any merchantable material will have substantially degraded. Further examination of this block by Clergue and MNR is warranted. Figure 9 shows material observed from the air.

Two other minor incidents of merchantable material were noted during the field portion of the audit. These were both reported by MNR, but not by Clergue (Note: forest operations inspections and reporting are discussed in Section 3.6.1 - Monitoring).

Recommendation 9: Clergue and partner shareholders must ensure all merchantable/marketable wood is processed based on approved utilization standards.

Recommendation 10: Clergue and the Ministry of Natural Resources must assess the harvest block in Whitman Township to determine and document the full extent of the utilization issue.

The 2000-2005 Algoma FMP indicated that Clergue in conjunction with OMNR was developing a marketing strategy to address utilization of wood fibre not required by Clergue's shareholder mills. The 2005-2010 Algoma FMP also discusses a utilization strategy. While elements of the strategy are being implemented (e.g. five-year export markets) the document was never completed.

The 2005-2010 Algoma FMP states that, *the intent is to maximize tolerant hardwood veneer and sawlog production for Boniferro Mill Works and Midway Lumber Mills*. This results in unutilized short pieces due to the tree length merchandizing process.

Both Clergue and MNR recognize the challenges in utilizing the volume of low grade material generated from harvest activities on the Forest. As the regulator, MNR must have clear standards with which to evaluate utilization on harvest operations. These standards reside in the Scaling Manual or may be specifically addressed in the approved FMP. Clergue and MNR are currently developing a mechanism for refining standards which address marketability while ensuring acceptable utilization.

The audit team's view is that the broader issue of utilization and markets needs to be addressed by Clergue and MNR. This includes any issues from residual material resulting from merchandizing practices. These may be dealt with by referencing the process in the joint MNR and industry document Towards Resolving Utilization Issues – A Process to Manage Unutilized Fibre[14].

Recommendation 11: Clergue and the Ministry of Natural Resources must develop a comprehensive marketing and utilization strategy for underutilized forest products on the Algoma Forest.

3.4.3 Renewal

The audit team observed 11 field sites representing a variety of silvicultural treatments that were implemented on the Algoma Forest during the audit period. These included tree planting, aerial and ground chemical tending, chemical and mechanical site preparation, and pre-commercial thinning. The renewal activities and SGRs were approved in the FMP and the AWSs, consistent with the FOPs, and were generally appropriate and effective for the specific site conditions. Where changes from approved activities occurred, an amendment to the FMP, FOP and an AWS revision was done and the operations were consistent with the site conditions.

Actual levels of renewal activities for the 2000-2005 FMP term on the Algoma Forest and Wawa Forest were less than planned in all cases except aerial chemical tending. This was primarily due to only 42% of the planned harvest area being cut. Since projections of renewal are normally based on the area planned for harvest, the undercut limited the usefulness of the comparisons. However, when the total actual area regenerated of 18,702 ha is compared to the actual depletion of 19,640 ha for the period 2000-2005 it can be seen that 95% of the area harvested was regenerated.

Although the actual area harvested for natural regeneration by the selection and shelterwood systems was only 39% of planned area, there was still an increase compared to the 1995-2000 term due to an increased demand for tolerant hardwood pulpwood and the addition of the Boniferro Mill Works new scrag line to process smaller diameter, poorer quality wood. This increase will help to improve the quality of the Forest (Figure 10). Although planned for natural regeneration, no seed tree cuts were reported as regenerated naturally during the audit period and only a small amount of clearcut area (91 ha) was regenerated naturally.

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[14] Industry/Ministry of Natural Resources Utilization Task Team. 1999. Towards Resolving Utilization Issues: A Process to Manage Unutilized Fiber. 12 pp. + Appendices.

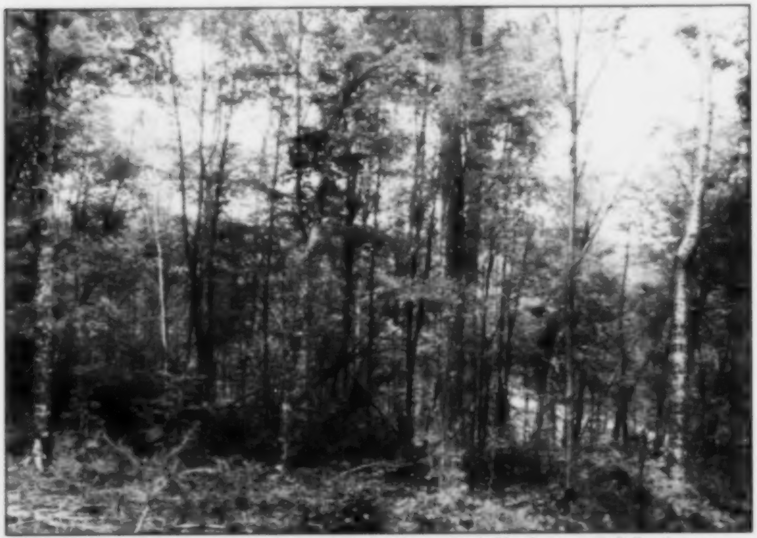

Figure 10. Tolerant Hardwood Selection and Shelterwood Systems were Well-Applied.

Artificial regeneration activities during the 2000-2005 period included planting 4,819 ha on clearcut areas or 73% of the five-year FMP forecast. In most cases, where planting was done there were also natural volunteers of spruce or jack pine observed. Renewal work was done within one to two years after harvesting was completed. No artificial seeding was planned for or conducted on the Forest.

Mechanical site preparation was completed using power disk trenchers on 2,167 ha or 44% of the forecasted area (Figure 11). Mechanical site preparation was done one year after harvesting to allow break down of the dried slash and increase available planting spots, and proved quite successful.

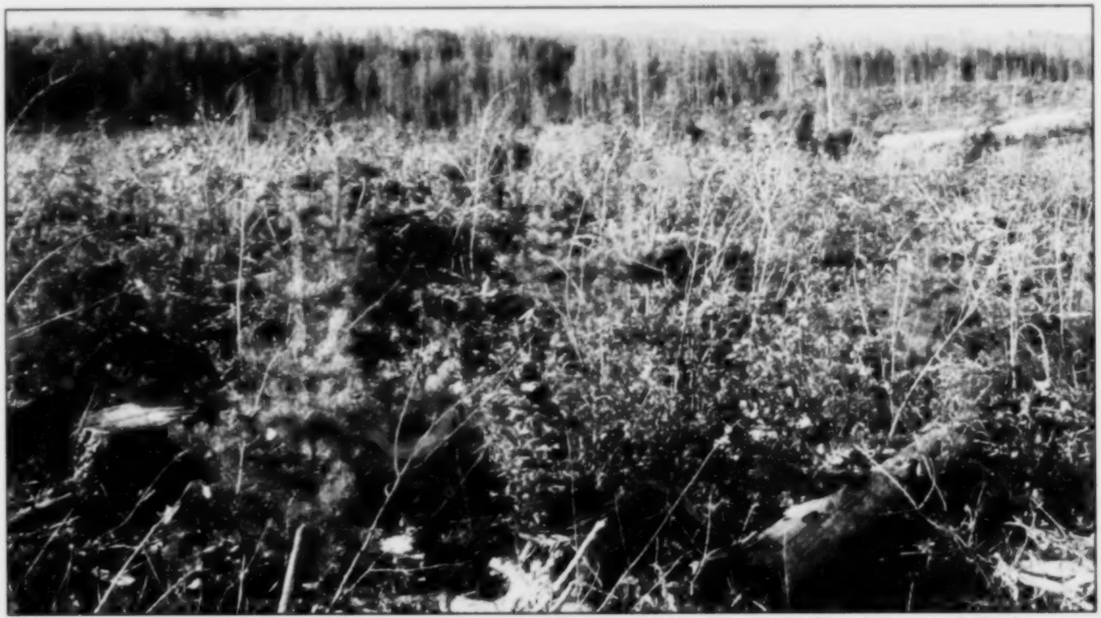

Figure 11. Power Disk Trenching Done One Year After Harvest to Facilitate Breakdown of Slash.

The audit team observed successful results of natural white pine and red pine regeneration under a white pine shelterwood seed cut (Figure 12). An excavator was used to site prepare the ground, using the backside of the bucket to lightly mix organic and mineral soil and create a suitable seed bed. An air-blast sprayer was later used to successfully control competition, and the young seedlings are now progressing well (Figure 13).

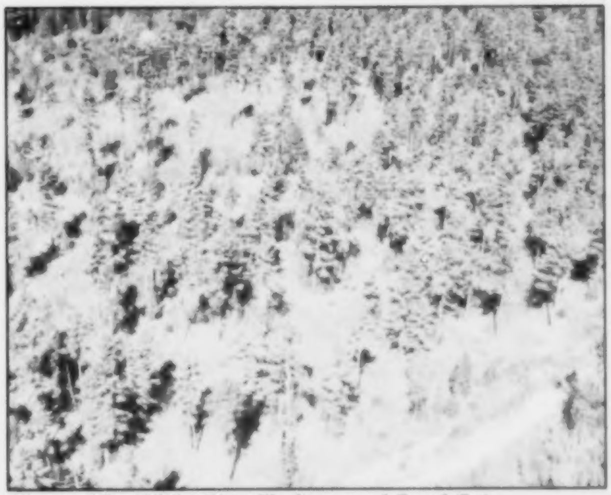

Figure 12. White Pine Shelterwood Seed Cut.

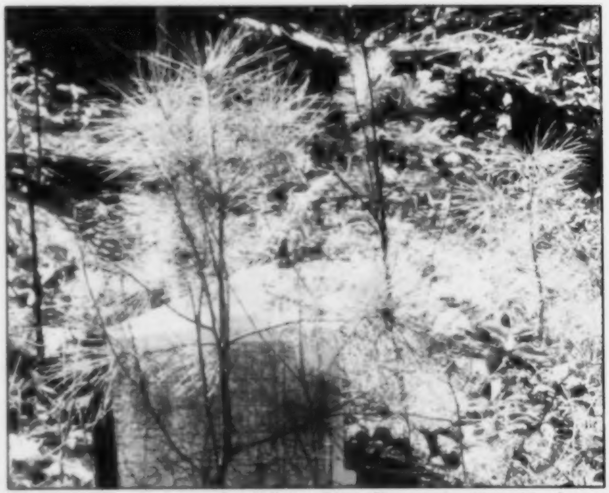

Figure 13. Successful White Pine Regeneration Under White Pine Shelter.

A successful example of natural yellow birch regeneration after a shelterwood harvest was also viewed by the audit team. During the harvesting operation, enough ground disturbance was created by the skidders to produce a mineral soil seed bed where yellow birch seed from the residual trees was able to germinate and grow successfully (Figure 14).

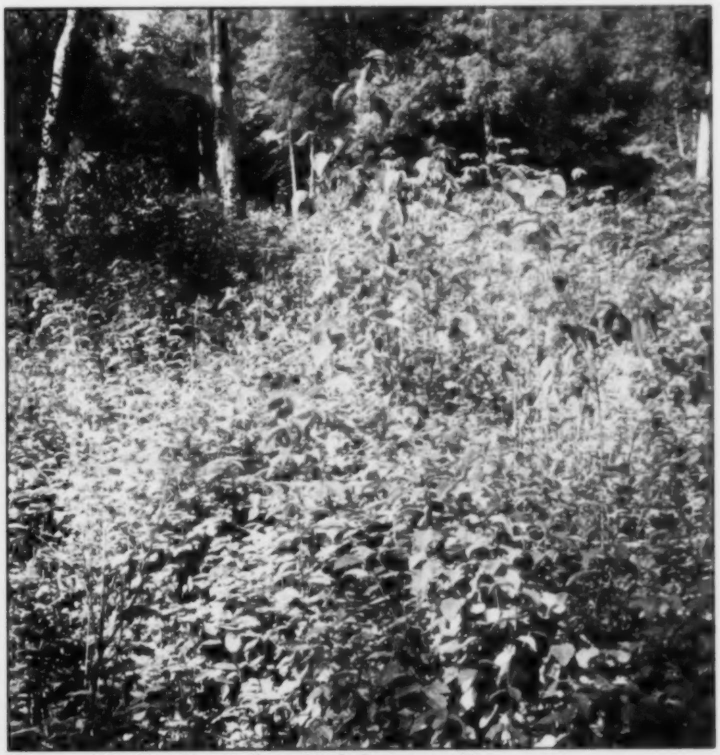

Figure 14. Healthy Yellow Birch Regenerating.

The audit team observed successful chemical site preparation conducted in 2005. Chemical site preparation was planned for 564 ha during the 2000-2005 period but only a small portion of that was completed.

White pine has historically existed on the landscape on the Algoma Forest. Through past logging practices much of the white pine was high graded and removed from the forest cover. A white pine management strategy for the Algoma Forest was prepared by Clergue which outlines measures to conserve the biological diversity of white pine and white pine ecosystems and manage the species to increase its presence on the Forest.

Examples of white pine planted in small pure stands and as a mixture with white and black spruce and jack pine were viewed in the field. A workshop and field tour held in June 2006 was also attended by an audit team member to view the problems associated with white pine blister rust.

Figure 15. Pruning of White Pine to Help Control Blister Rust.

The high incidence of white pine blister rust infection and white pine weevil on the Algoma Forest and the need for effective methods to manage white pine to combat this serious disease and damaging insect has raised concerns for Clergue staff. Clergue understands that it is important to select planting sites which are of low risk to plantations for blister rust, and to prune and tend this species for white pine to survive. One of the small plantations visited had an area of pruning applied to young seedlings (Figure 15). The pruning was conducted by MNR junior rangers. The audit team encourages the continuation of this pruning work since it is a lower lying area with less airflow and therefore a higher risk. The other more recent plantations were planted on side slopes with greater airflow. It is important that areas where white pine is introduced, either in pure plantations or mixed with other conifer, be closely monitored. It is recognized that such intensive tending work to ensure white pine survival and re-establishment on the landscape will require a great deal of support both monetarily and from experts in white pine establishment and pathology. The audit team encourages Clergue to seek advice and support to establish small white pine trial demonstration areas on the Algoma Forest and ensure effectiveness monitoring of white pine management techniques. Proven methods of establishment on small areas may be more useful than a larger broadcast approach.

Suggestion 6: Clergue should seek advice and monetary support to establish and tend small white pine demonstration areas.

It is Clergue's view that society should pay for increasing white pine on the landbase and that MNR should continue with work such as white pine pruning as part of their overall commitment to successful white pine regeneration.

Prescribed burns for site preparation were not used on the Algoma Forest during the audit period. An area of 58 ha was reported as slash pile burning.

Forest operations inspection reports and compliance plan were reviewed. Renewal operations were in compliance with approved operations and the compliance plan was followed.

3.4.4 Tending and Protection

Tending and protection activities on the Algoma and Wawa Forests included ground and aerial herbicide spraying, basal bark release, pre-commercial thinning, and improvement cutting. No protection (insect pest control) activities were planned or conducted. Achieved levels were generally lower than planned due to the reduced area actually harvested. Tending activities were consistent with the FMP including the SGRs and the FOPs, and were appropriate to the specific site conditions.

Tending on 50% (9,978 ha) of the planned area (20,084 ha) was achieved, which was comparable to the actual proportion of area harvested (42%). The audit team viewed examples of air blast ground herbicide spraying which was effective in controlling competition (Figure 16).

As seen in Figure 17, herbicide spraying by helicopter was an effective tool used to control hardwood competition in clearcut areas. During the 2000-2005 FMP term, more area was aerial sprayed than planned (1,870 ha sprayed versus 993 ha planned). This was due to a shift away from ground tending and an increase in aerial tending due to contractor availability and cost effectiveness.

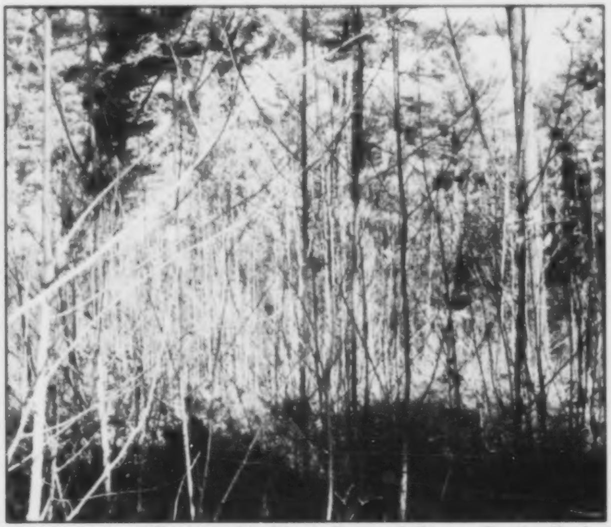

Figure 16. Effective Air Blast Ground Spray Controlled Competition.

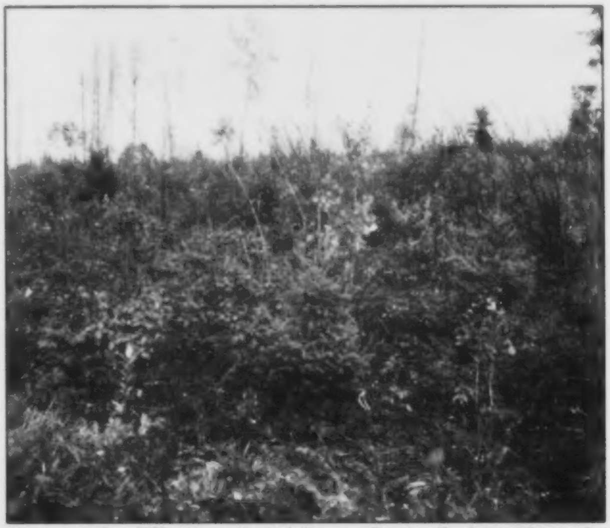

Figure 17. Effective Aerial Spray Controlled Hardwood Competition.

Spacing, pre-commercial thinning, and improvement cutting was completed on 46% of the area planned during 2000-2005. Basal bark application to release desired crop trees such as spruce and white pine from competition was performed during the last two years of the 2000-2005 term. The audit team observed an area where it was partially successful (Figure 18). A wider opening may be necessary to provide a longer window of growing time. Thinning by brush saw to release black spruce, poplar, and white birch crop trees in a mixed stand was also viewed. The work was well done and will contribute to increasing quality and growth of the crop trees (Figure 19).

The audit team observed yellow birch crop trees which were released using brush saws in 2003 under a Forestry Futures funded project. The trees were thinned to allow 1.8 m to 2.4 m spacing between crowns. Clergue found that the crowns were closing within three years and adjusted their practices by increasing the crown spacing to 2.4 m to 3.0 m. These sites will be managed under a yellow birch shelterwood system as time passes (Figure 20).

Clergue is making a concerted effort toward applying effective silvicultural methods on the range of sites and species on the Algoma Forest. The renewal and stand improvement work will contribute to improved future forest conditions on Forest.

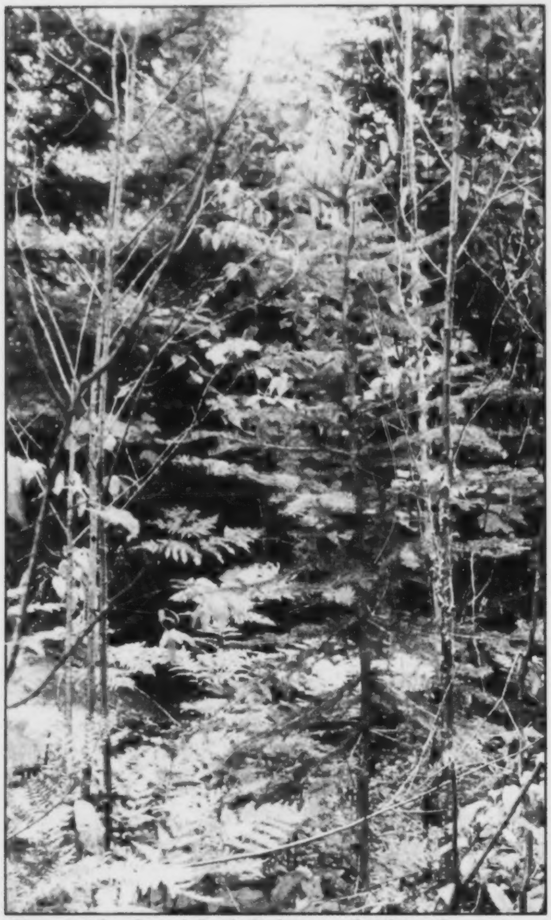

Figure 18. Basal Bark Release of White Spruce and White Pine.

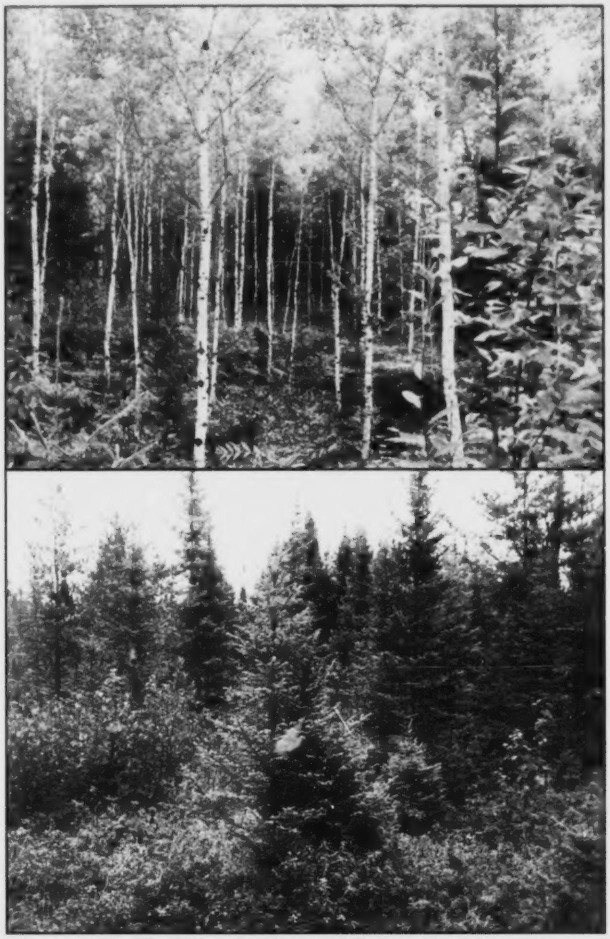

Figure 19. Thinning Poplar and Spruce to Increase Growth and Quality.

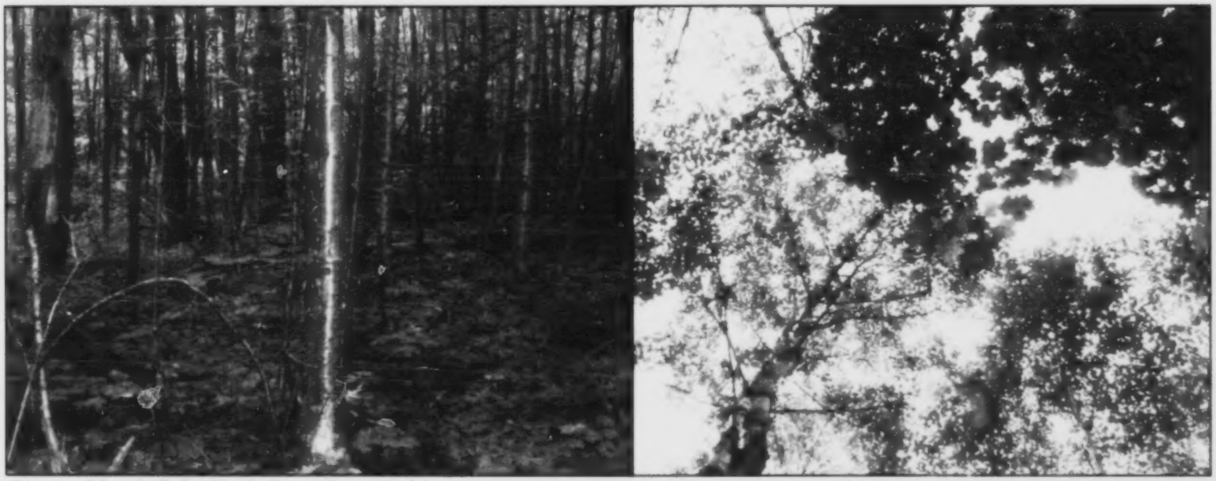

Figure 20. Yellow Birch Crop Tree Release.

3.4.5 Renewal Support

The renewal support activities are consistent with the FMP including the AWS and the information reported in the ARs. Since Algoma Forest and Wawa Forest share seed zone 23 and purchase seed together, cone collection is combined for the two areas. There was a higher than planned black spruce cone collection for the Algoma Forest since the Curtis seed orchard had a bumper crop in 2002. This seed is of higher genetic quality and should show a genetic gain.

Although white pine cones were collected in 2004, the resulting seeds had low viability and were discarded. White pine cones will be collected when good cone crops develop. Jack pine and white spruce seed is in excess in storage and did not have to be collected during the 2000-2005 plan term.

There is enough seed in storage to provide a continuous supply of seed to produce the required number of seedlings for the 2005-2010 term. However, the white spruce seed in storage was too old and had deteriorated to the point where it could no longer be used by nurseries. As a result there will be a shift to plant black spruce on the Algoma Forest in the short term until viable white spruce can be collected. White spruce seed from the correct seed zones may also be purchased to replace the lost seed in the interim.

Clergue manages two first generation black spruce seed orchards (Figure 21) with technical support from the Northeast Seed Management Association (NESMA). The Lastheels orchard is on the old Wawa Forest, and the Curtis Seed Orchard is the old Algoma Forest. Both orchards were rouged in 2003. This involved removing undesirable trees based on measurements from family test sites to increase the quality of the future seed. A second rouging will be needed in the Lastheels orchard possibly in the 2005-2010 FMP period.

Figure 21. Lastheels Black Spruce Seed Orchard.

Forest operations inspection reports and compliance plans were reviewed. Renewal support operations were in compliance with approved operations and the compliance plan was followed.

3.4.6 Access

The audit team sampled a selection of access activities for primary, secondary and tertiary roads (road construction, road decommissioning, road maintenance, various types of water crossings, i.e. normal culverts, portable bridges) from those areas where activities were conducted during the five-year period of the audit. All road building activities were as planned or were covered by a plan amendment.

The audit team was required to examine a sample of road maintenance work which was invoiced under agreement funding for the year ending March 31, 2006. The audit team is satisfied that work for which invoices were submitted (e.g. grading of the 67 Mile Rd., gravelling, brushing and bridge redecking on the Loop Rd., gravelling and ditching of the Much Rd., etc) was conducted. The audit team could not check invoiced work for snowplowing or sanding of roads.

The 2001 IFA identified water crossings as an area needing improvement on both the Wawa and Algoma Forests. The audit team noted significant improvement in water crossings throughout the amalgamated Algoma Forest. Crossings exhibited proper diameter pipes, pipes long enough to allow appropriate sloping of the shoulders, rock rip-rap around the culvert, proper embedding, etc. The audit team saw one five-metre portable bridge decommissioning and it was well done with good use of rock rubble on the stream bed and approaches to allow traditional access to the side of the bridge approaches while mitigating water quality issues.

The audit team noted that on many of the approaches to water crossings, grader operators were not careful to ensure proper crowning of the road and often created small berms along the edges of the road. These actions tend to channel water and sediment towards the waterway.

Suggestion 7: Clergue should ensure grader operators properly crown roads and avoid creating berms on the shoulders of roads, especially on approaches to water crossings.

Both Category 9 and 14 gravel pits were examined. Category 14 pits showed noticeable improvement over the audit term (Figure 22). Pits developed early in the term were usually not rehabilitated with steep working faces and no setback, which led to some bordering trees falling into the pit. Many of the Category 14 pits checked which were used toward the end of the audit term had improved on all these deficiencies. Category 9 pits were generally found to be marked adequately but the five-metre setback distance for trees was often not respected (Figure 23) and overburden, where it was available, was not removed and stockpiled.

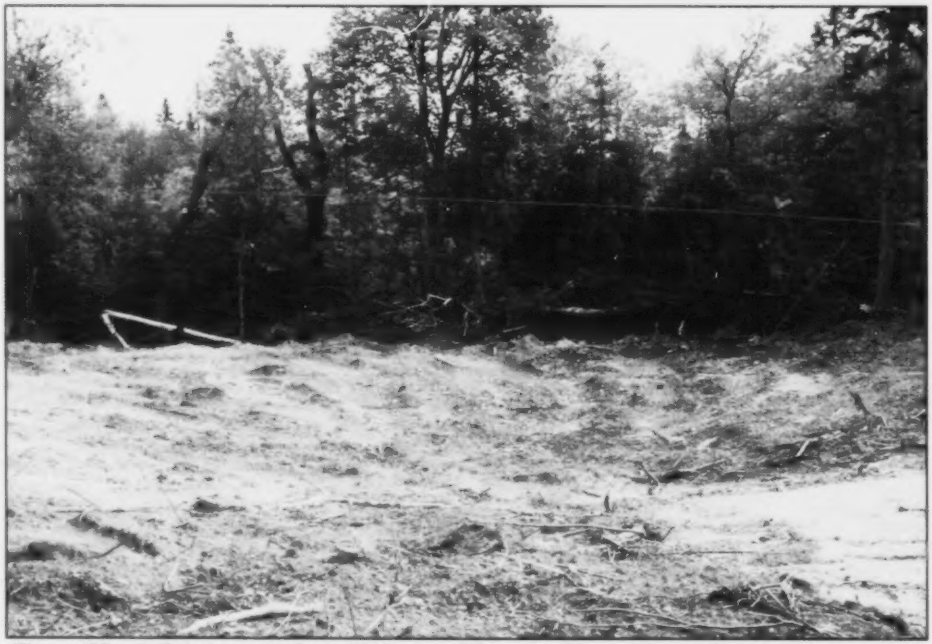

Figure 22. A Category 14 Pit With Its Workface Re-Sloped To An Acceptable Angle of Repose.

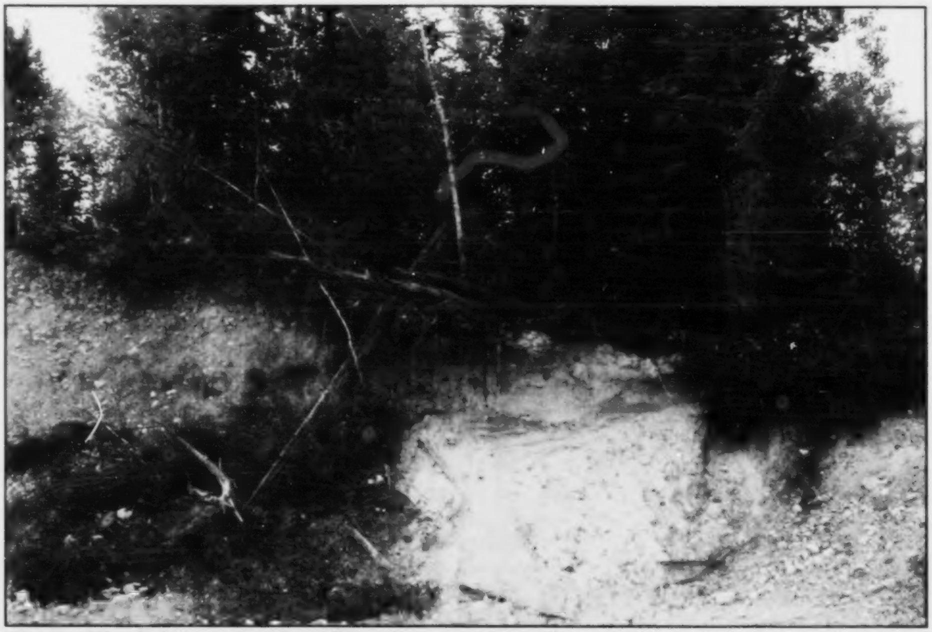

Figure 23. A Category 9 Pit Where Trees and Overburden Were Not Removed for a 5m Distance From Its Face.

Recommendation 12: The Ministry of Natural Resources and Clergue must ensure that aggregate pit permittees for pits used for the construction and maintenance of forest management roads on the Forest comply with the requirements of the Aggregates Resources Act.

3.5 System Support Services

3.5.1 Human Resources

Proper communication, awareness of duties and responsibilities, and training of staff, employees and contractors is necessary in order to successfully manage the Forest.

The audit team found that communication, awareness of responsibilities, and access to training were sufficient to fulfill the required management of the Forest. Staff records for both MNR and Clergue were readily available. Interviews with those parties as well as Clergue's partner shareholders reflected a good knowledge of current legal requirements. Clergue generally showed a close working relationship with the operators on the Forest especially when critical issues needed to be communicated. The lack of staff turnover in key positions contributed to this situation and should continue to be encouraged.

Overall training and supervision of MNR staff was sufficient to enable proper management of the Forest, with one exception. A training Recommendation is made in Section 3.3.8 to address a specific issue regarding efficient plan review.

MNR staff in the Wawa District office reported challenges with facilitating the Wawa LCC due to staff time constraints. While there was no evidence of any deficiency in achieving work targets, the audit team urges the Wawa MNR District to explore all options for balancing workloads.

3.5.2 Documentation and Quality Control

In most instances, documentation was complete and easily accessed. This included documents and records relating to FMPs, amendments and public consultation. Case specific deficiencies were noted in Native peoples consultation (Suggestion 2), monitoring, and annual reporting. The audit team was informed that on two occasions documents were misplaced and MNR and Clergue had worked together to remedy the situation by providing copies to the other party.

Mapping work was completed using GPS for accurate map boundary locations. Domtar in Timmins updated the GIS system for Clergue. Back up for all digital information was kept in Montreal. Information was sent back and forth between MNR and Clergue via computer and a forest information portal.

Wawa MNR has a copy of the Algoma Forest FMP available in filing shelves. A forester was available in Wawa to answer general questions; specific questions are routed to Sault Ste. Marie MNR. AWS revisions for the Wawa portion of the Forest went to the compliance technician and biologist in Wawa for comments and filing at the Wawa MNR office. The technician was not receiving current mapping changes with the AWS revisions and this caused difficulty when completing compliance inspections.

Suggestion 8: Wawa District Ministry of Natural Resources should receive mapping changes with all Annual Work Schedule revisions.

A Recommendation from the previous Wawa Forest IFA required MNR to ensure that amendments to the 1995-2000 FMP were located adjacent to the plan text. While staff informed the audit team that this was done, the evidence could not be found. The amendments in question are now obsolete, and the current amendment filing system is more than adequate.

3.6 Monitoring

3.6.1 General Monitoring

The forest industry and MNR both have responsibilities for the compliance monitoring of forest activities. SFL holders have the lead role in forest compliance planning, conducting inspections, the identification of compliance and non-compliance, reporting to MNR, performance of corrective measures and future preventative measures to ensure improvement, as well as training and education in all areas of forest compliance. The role of MNR is focused on the regulatory aspects of forest management including monitoring, auditing of industry compliance inspections, assessing non-compliance significance, and determining corrective and enforcement action.

Wawa District MNR

District Compliance Plans were generally well done and contained a good analysis of the previous year's activity. The number of inspections met the intent of the District compliance plans. The District demonstrated appropriate use of Remedies and Enforcement provisions under the CFSA by use of a Repair Order to control road erosion into an AOC.

During 2004-2005 MNR reported 19 Not-in-Compliance (NIC) incidents in Wawa District. Several NIC incidents were viewed during the field portion of the audit. While a number of the NIC occurrences were technically a NIC, in the view of the audit team, these were marginal compliance issues that may be better managed by other means. These include NIC recorded for tree planting trays left on site. Inspectors are required to report all observations, but have some discretion when determining compliance status. District staff have implemented joint field reviews with industry staff. These are a good initiative and should be continued. The Area Supervisor now reviews each non-compliance with the inspector and senior Technician. The number of reported NIC incidents dropped to five in 2005-2006.

Suggestion 9: The Ministry of Natural Resources should consider all options to achieve compliance objectives for minor incidents when completing forest operations inspections.

Wawa District was not meeting the Forest Information Manual[15] (FIM) and compliance policy forest operation inspection report and submission timing requirements (forest operation information program). This is particularly crucial for NIC incidents when the inspection report is to be signed off by the Area Supervisor within five working days. The District attempted to notify Clergue verbally of the NIC within the five working days.

Recommendation 13: The Ministry of Natural Resources must ensure Forest Operations Information Program reports are signed off within the required timelines.

Sault Ste. Marie MNR

The District compliance plan for the term of the audit consisted of only a one-page inspection schedule. The plans did not address compliance objectives, priorities, and risk assessment for forest operations. These are requirements if the District forest compliance program is to be conducted in an effective and efficient manner and ensure MNR meets its obligations. The 2006-2007 District compliance plan was greatly improved.

Recommendation 14: The Ministry of Natural Resources must ensure that internal compliance planning guidelines are followed.

An adequate number of inspections were conducted by Sault Ste. Marie District staff. Documentation and observations on the inspection reports improved significantly during the audit period. Inspectors made good decisions on compliance status and recommended actions. The inspectors were qualified and knowledgeable of forest operations. The District demonstrated appropriate use of Remedies and Enforcement provisions under the CFSA by use of a Compliance Order and Administrative Penalty for an incident of harvesting in an AOC and cutting blue-marked trees that were designated to be left on site.

Clergue

Clergue, as the SFL Company, has overall responsibility for the compliance program on the Forest. It is responsible to prepare a five-year Strategic Forest Compliance Plan and an Annual Plan of Operations. These plans were completed by Clergue and were well done.

Under the SFL Company's internal structure and division of responsibilities, three of Clergue partner shareholders (Boniferro Mill Works, Midway Lumber Mills, and St. Marys Paper) are responsible for conducting all access and harvest operations. This includes monitoring and supervision of their operations, conducting forest operations inspections, submission of inspection reports to Clergue, and carrying out any mitigation measures related to access and harvest operations. Clergue partner shareholders have trained and certified forest operations inspectors. Clergue is responsible for approving partner shareholders' inspections reports and is accountable for their accuracy. The audit team found a number of areas related to compliance monitoring and reporting that need improvement:

- Clergue partner shareholder in Wawa is deficient in carrying out and submitting "Completed" inspection reports to sign off blocks;
- Clergue partner shareholder inspectors are not always reporting compliance issues accurately – they may be downplayed or avoided and the observations and detail on these inspection reports did not meet standards;
- Winter operations blocks are not always checked during snow-free periods when operating conditions merit (Note: block with merchantable material left in Section 3.4.2 of this report);

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[15] Ministry of Natural Resources. 2001. Forest Information Manual. Toronto: Queen's Printer for Ontario.

- Clergue and partner shareholders were not meeting report submission timing requirements in FIM.

Recommendation 15: Clergue and partner shareholders must:
a) conduct inspections and submit Completed or Suspended Operations reports within the timeframes in the Forest Information Manual and the Forest Operations Information Program Inspection Policy, and
b) ensure that all compliance incidents are accurately reported and follow Forest Operations Information Program reporting requirements.

Suggestion 10: Clergue should take direct responsibility for auditing inspections conducted by partner shareholders or use other means to ensure data are complete and accurate.

Two incidents were noted during the field portion of the audit where Clergue partner shareholders were either too slow to correct a potential environmental concern or did not provide adequate training/supervision to an operator. In both incidents MNR issued an Order under the CFSA.

Recommendation 16: Clergue and partner shareholders must ensure:
a) all environmental concerns are resolved/corrected in a timely manner, and
b) adequate training and/or supervision of operators is carried out on all operations.

During the audit period Clergue conducted plantation assessments two growing seasons after establishment to identify treatment shortcomings and remedial requirements. This information along with visual inspections was used to determine the need for planting refill and/or competition control.

For naturally regenerated hardwood and conifer stands, surveys provided stand structure information and age to update the FRI. Under the 2000-2005 FMP surveys were completed on a minimum of 20% of each harvested area that was naturally regenerating to be a conifer dominated FU after the third year of harvesting to identify treatment requirements. The information gathered was stored on GIS to validate the location of the survey plots and proposed future treatments. A change was made in the 2005-2010 FMP whereby stands managed under the clearcut system allowed to regenerate naturally after harvesting will be assessed after two growing seasons have passed since harvesting has been completed.

FTG assessments were done by helicopter to determine species height and stocking. Where Clergue was uncertain of the tree height from the air, ground surveys were conducted. The FTG sites checked during the field visit showed that stand typing, stocking and height estimates were accurate (Figure 24). FTG surveys are conducted seven growing seasons after establishment for artificial regeneration and seven years after harvesting on all naturally regenerated stands. Results from the FTG surveys were used to update the FRI.

The area forecasted to be assessed for FTG in the 2000-2005 Algoma FMP, was 6,560 ha. The total area actually assessed was 6,821 ha. Of that area, 3,811 ha, or 56% was successfully regenerated. Most of the backlog area was assessed in 2000 and 2001.

The area surveyed and deemed not FTG was 3,010 ha. The main reason for these stands not being FTG was the time since harvest for naturally regenerated spruce sites, and competition levels requiring tending. Some of this area was aerially tended in 2002 and was not yet re-assessed. Areas not deemed FTG will be either re-treated or may require more time to reach FTG standards before a re-assessment is done.

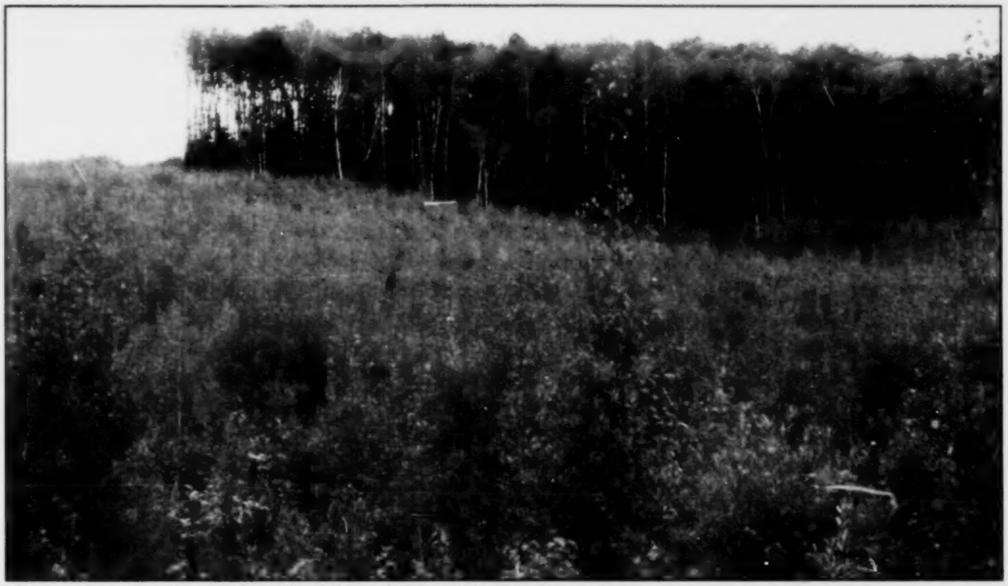

Figure 24. Poplar FTG with Original Forest in Background.

The area forecasted to be assessed for FTG in the 2000-2005 Wawa FMP was 3,266 ha. The total area actually assessed was 13,352 ha. Of that area, 6,380 ha (48%) was successfully regenerated. A large amount of backlog area was assessed as not yet FTG. The discussion regarding longer term trends on the Forest in Section 3.7.3 indicates that backlog areas do meet FTG standards over time.

The 2005-2010 Algoma FMP forecasts 17,806 ha as the area to be assessed during the term of the FMP.

3.6.2 Annual Reports

ARs for both the Wawa and Algoma 2000-2005 FMPs were usually complete and submitted on time. The standard 2004-2005 AR was submitted on time, but the additional requirements for the Year Ten AR were not. Corporately prepared MNR tables (Tables AR-4, 5, 11, 12, and 13) were not provided early enough, therefore Clergue requested an extension to the Year Ten AR submission deadline. While other AR deficiencies are noted below, the following Recommendation is partly directed at MNR to address this error.

All of the approved ARs during the audit period contained the required Tables AR-12.1, AR-12.2, or AR-13 which summarize forest operations inspections for Clergue and MNR. However, the spring reports for both Forests were sometimes temporarily incomplete as MNR had not prepared Tables AR-12.1 and AR-12.2 in time for inclusion.

The AR completed by Clergue for both the Algoma and Wawa Forests in 2004-2005 presented a good discussion on compliance issues. The AR for Wawa did not have any text summarizing the results of monitoring activities and NIC incidents in 2001-2002 and 2002-2003. This is a requirement of the FMPM.

Generally, the AR's conclusion section did not discuss progress toward FMP objective achievement or emerging trends and how the plan would or could react.

Recommendation 17: Clergue and the Ministry of Natural Resources must ensure that Annual Reports and Year Ten requirements meet all requirements and timelines of the Forest Management Planning Manual.

The Condition 34 reports (formerly Term and Condition 77) are to be completed by MNR and included in the ARs up to the years 2003-2004. Both the Wawa and Sault Ste. Marie MNR offices have completed the ARs on Condition 34 for the years 2001-2002 to 2005-2006 as required. Wawa District office reports were clear and indicated that discussions were ongoing with Michipicoten First Nation. The Sault Ste. Marie MNR office reports could be a little clearer by using the heading Algoma Forest as they have with the Northshore Forest.

3.6.3 Report of Past Forest Operations

The Algoma and Wawa Forest 1995-2000 RPFOs were reviewed and no issues were specifically documented that related to modelling assumptions. The review indicated that assumptions made through the analysis of implementation of the chosen management strategy in the RPFO (previous Timber Management Plans) were generally appropriate. Algoma RPFO recommendations that could be addressed within the FMP included the reclassification of the landbase for current parks and protected areas, update of the inventory with recent regeneration and FTG assessment information, and the promotion of yellow birch regeneration. The Wawa RPFO recommendation that could be addressed within the FMP related to the promotion of utilization of low-grade hardwood from the Forest. These issues were addressed in the assumptions in the 2005-2010 FMP strategic modelling with respect to development of an updated, approved planning inventory, inclusion of a strategy to promote yellow birch on the Forest, and improved utilization of low-grade hardwood.

The 2004-2005 AR was completed as a Year Ten AR under the FMPM (2004). The report included the required analysis of the validity of modelling assumptions with revisions identified for the next FMP. No specific recommendations for modifications or refinements to assumptions used in the development of the long-term management direction (called strategic planning during that timeframe) were included other than the confirmation that all inputs would be reviewed during plan development. Refinements to modelling assumptions had already occurred during preparation of the 2005-2010 FMP.

The 2004-2005 Year Ten ARs for both the Wawa and Algoma Forests contained indicator data for five of the six planning indicators of sustainability (e.g. wildlife habitat, percent of AHA actually utilized, etc.) and six of eight monitoring indicators (e.g. self–evaluation of the LCC, percent of required silvicultural budget received, etc.). No updated information was available for the planning indicator measuring landscape processes generated for the 2005-2010 FMP (net primary productivity/water yield) as MNR is no longer monitoring these indicators. No data were provided for the monitoring indicators of water yield, and the ratio of area of riparian reserves to length of shoreline adjacent to timber harvesting activity, since MNR is no longer monitoring those indicators either. The wildlife habitat indicator data cannot be used as a second data point on trend graphs because it was originally developed for the separate 2000-2005 Algoma and Wawa FMPs. Therefore, long-term monitoring of this indicator has also been compromised.

Since no long-term trend information was available, an analysis of this aspect of the indicator data would not provide the plan author with solid evidence that the Forest was being managed in a sustainable manner. Besides the change in landbase and indicators, the FUs have changed which made analysis even less useful.

MNR has a comprehensive legislative framework for ensuring forests are managed sustainably. The audit team believes that improvements could be made to the way sustainability is assessed through the FMPM. The backbone of forest sustainability assessment is the long-term monitoring of the same indicators for change. MNR should ensure that any changes to indicators (as was seen from the 1996 to the 2004 FMPM) are absolutely necessary. In addition, MNR may wish to consider whether all indicators should have equal weight in the assessment of forest sustainability. Since one of the CFSA's guiding principals is the conservation of productive Crown forests, their associated ecological processes and biological diversity, it would be assumed that the biological indicators (i.e. area of forest type and age; area of wildlife habitat; area of old growth, etc.) would receive more weight in sustainability determination, for instance, than the per cent of forecast volume utilized by the mill. The 2004 FMPM provides no direction to this effect, leaving planning teams, district managers and regional directors to make their own determinations.

Suggestion 11: The Ministry of Natural Resources should provide differential values for indicators of forest sustainability that reflect their relative importance.

Suggestion 12: The Ministry of Natural Resources should ensure that no changes to the suite of indicators of forest sustainability are made without compelling reasons.

The renewal and tending activities in the Year Ten ARs for both the Algoma Forest and Wawa Forest 2000-2005 FMP terms were reviewed. The Algoma Forest and Wawa Forest Year Ten AR review of renewal and tending activities did not include a detailed discussion of the amount of operations to date. Planned and actual figures, including percentages and perhaps a summary bar chart to illustrate differences in planned and actual area of each renewal or tending activity along with an explanation, would be helpful. In the Algoma Forest report mechanical site preparation, although discussed, did not appear in Table AR-7 for 2004-2005 or in Table 6 of the TAR.

A discussion regarding expenditures was included in both the Algoma Forest and Wawa Forest Year Ten ARs. In the Algoma Forest report it would have been helpful to include some actual numbers to aid in the discussion. Silvicultural effectiveness was discussed for both the Algoma Forest and Wawa Forest. It was reported that the general trend on both Forests was to assess the backlog of areas not yet FTG. The harvest and regeneration trend discussion was covered adequately for both Forests considering the difficulty in comparing changed FUs and past information reporting changes.

The Algoma report contained a discussion on trends and activities which will affect the management and future silvicultural effectiveness on the Algoma Forest. This included increasing crop tree release in yellow and white birch, the importance of continued Forestry Futures Funding for tolerant hardwood stand improvement, and the trend for an increased demand for tolerant hardwood pulpwood.

The Wawa Forest report included a discussion on trends and activities that will affect future silvicultural effectiveness. This included: Clergue's interest in increased opportunities to operate in tolerant hardwood dominated stands to try to improve their condition and promote more suitable site specific species; the continued use of Ontario Forest Accord[16] item 11 Opportunity 1 (Salvage) to promote management of low-value, low-volume stands; and in increasing intensive silviculture to reduce rotation ages and increase yields of high-value products through pre-commercial thinning.

3.7 Achievement of Management Objectives and Forest Sustainability

3.7.1 Achievement of Management Objectives

According to the FMPM, objectives are developed for benefits or outcomes that can be achieved by managing forest cover. The audit team reviewed the achievement of objectives associated with the 2000-2005 Wawa Forest and Algoma Forest FMPs and the 2005-2010 amalgamated Algoma Forest FMP. A summary of the objectives, with the audit team's assessment of their achievement, is presented in Tables 3, 4 and 5.

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[16] Ministry of Natural Resources. 1999. Ontario Forest Accord. Toronto: Queen's Printer for Ontario.

Table 3. Audit Team's Assessment of the Achievement of the 2000-2005 Wawa Forest Management Plan's Objectives.

Objective	Audit Team Assessment of Progress Toward Achievement (Met/Not Met/Partially Met)	Comment, Recommendation, or Suggestion
1. Forest Diversity		
1.1. Characteristics of Operating Blocks in Relation to Natural Disturbance	Partially Met	Three of five disturbance size classes are moving towards the natural disturbance template.
1.2 Characteristics of Residuals in Relation to Natural Disturbance	Met	
1.3 Forest Species Composition	Partially Met	Acceptable progress, but creating yellow birch and white pine components for the transition forest similar to natural levels is unlikely. Possible for other components and the boreal forest type.
1.4 Forest Age Structure	Partially Met	Achieving old growth components in yellow birch and white pine forests similar to natural forest conditions will take decades to assess. Too early to say Boreal forest age structure on the right track.
2. Provision of Forest Cover		
2.1 Wildlife Habitat	Met	
2.2 Forest Productivity and Soil Quality	Met	
2.3 Global Air Quality	Partially Met	Difficult to measure. Continue with strategies. Need to rehabilitate landings and roads when no longer needed for forest management activities.
2.4 Water and Fish Habitat	Met	
3. Community Economic Stability and Multiple Benefits to Society		
3.1 Wood Supply	Partially Met	Approximately 50% of volumes harvested. Wood supply commitments not all met.
3.2 Tourism and Recreation	Partially Met	Pulling culverts and portable bridges on tertiary roads without a strategic access plan has negatively impacted recreational users and commercial tourism and conflicts with stated open roads policy (Suggestion 4).
3.3 Cultural Heritage Values	Met	
3.4 First Nations	Met	
3.5 National and Provincial Parks	Met	
3.6 Access Management	Met	
4. Silviculture		
4.1 Application of Silviculture Program	Met	
4.2 Quality of Timber	Met	
4.3 Increase Productivity	Met	

Table 4. Audit Team's Assessment of the Achievement of the 2000-2005 Algoma Forest Management Plan's Objectives.

Objective	Audit Team Assessment of Progress Toward Achievement (Met/Not Met/Partially Met)	Comment, Recommendation, or Suggestion
1. Forest Sustainability		
1. Forest Diversity	Partially Met	Five of seven disturbance size classes moving towards the natural disturbance template. Restoring forest composition to natural levels likely not achievable for species like white pine and yellow birch.
2. Maintenance of Ecological Processes and Forest Productivity	Partially Met	Nest and wildlife trees in selection cuts not always identified (Recommendations 4 and 5); some Category 14 pits did not meet all requirements (Recommendation 12).
3. Forest Cover	Met	
4. Water Quality and Fish Habitat	Met	
B. Community and Resource Use Sustainability		
1. Timber Supply	Partially Met	Approximately 50% of volumes harvested. Wood supply commitments not all met.
2. Integrated Resource Management	Partially Met	Pulling culverts and portable bridges on tertiary roads without a strategic access plan which has received public input compromises IRM (Suggestion 4).
3. Cultural Heritage Values	Met	
4. First Nations	Met	
5. Silviculture	Met	

Table 5. Audit Team's Assessment of the Achievement of the 2005-2010 Algoma Forest Management Plan's Objectives.

Objective	Audit Team Assessment of Progress Toward Achievement (Acceptable or Incomplete)	Comment, Recommendation, or Suggestion
A. Forest Sustainability		
1. Forest Diversity		
1.1 Spatial Diversity	Acceptable	
1.2 Forest Species Composition	Acceptable	
1.3 Forest Age Structure	Acceptable	
2. Maintenance of Ecological Processes and Forest Productivity	Incomplete	Nest and wildlife trees in selection cuts not always identified (Recommendations 4 and 5).
3. Forest Cover	Acceptable	
4. Water Quality and Fish Habitat	Acceptable	
5. Silviculture Objective	Acceptable	

Table 5 continued.

Objective	Audit Team Assessment of Progress Toward Achievement (Acceptable or Incomplete)	Comment, Recommendation, or Suggestion
B. Community and Resource Use Sustainability		
1. Resource management for consumptive purposes		
1.1 Timber Supply/Forest Industry	Incomplete	Strategy to address under-utilized fibre needs to be completed (Recommendation 11).
1.2 Commercial Tourism	Acceptable	Three RSAs signed and one in progress.
1.3 Other Consumptive and Commercial Activities	Acceptable	
1.4 Land and Water Based Recreation	Acceptable	
2. Road Access	Acceptable	
3. Cultural Heritage Values	Acceptable	
4. Aboriginal Communities	Acceptable	

3.7.2 Review of RPFO Assessment of Sustainability

A Year Ten AR was prepared for both the Wawa and Algoma Forests for 2004-2005. It contained a comprehensive review of the achievement of management objectives set out in the 2000-2005 FMPs. Conclusions were the same for both Forests since many of the management objectives and strategies overlapped as did many of the management challenges. The information was consistent with that contained in the TAR. The now amalgamated Algoma Forest is on a sustainable course. Variables associated with management of forest cover are within the bounds of natural variation, values are being protected, the public is involved and their input and concerns are considered. While harvest levels, and consequently renewal programs, have been less than planned this is not considered a threat to forest sustainability. The shortfalls were principally due to market conditions for wood and not management decisions.

3.7.3 Review of the Comparison and Trend Analysis of Planned versus Actual Forest Operations

The auditee prepares a TAR to provide historical information on trends and changes associated with forest management over several planning terms. Clergue prepared the TAR in consultation with MNR. In some cases information in the TAR went back to 1990. Information from the separate Wawa and Algoma Forests was combined where appropriate to allow comparisons over the reporting period. Significant trends and observations are summarized below.

The total landbase was reduced by approximately 140,000 ha due to removals associated with Ontario's Living Legacy Land Use Strategy and corrections to the status of land tenure. There was also a significant reduction (approximately 115,000 ha) in the area available for timber production as a consequence of these adjustments. Working groups most affected were Sp (-24,000 ha), Mh (-40,000 ha) and Bw (-56,000 ha). Barren and Scattered areas remained relatively constant at approximately 7% of the production forest landbase.

Harvest area experienced a 30% decline since 1990. Reductions were associated with losses in productive forest area due to withdrawals for parks (12%) and reserves (10%). Clergue estimates that area currently unavailable for harvest attributable to implementation of AOCs and NDPEG on the Algoma Forest are approximately 14% of the managed Crown forest area.

Planned harvest volumes declined while actual harvest volumes remained constant, suggesting increased overall yields. A portion of the increase can be attributed to new markets for hardwood pulp which resulted in an increasing trend in utilization of maple. Utilization of planned volumes in the maple working group increased from 31% to 78% (363,000 m^3) between the 1990-1995 term and the 2000-2005 term. In general, total harvest volume was less than 50% of planned in all terms. The majority of the shortfall was associated with under-harvesting in the birch working group during each planning term. Conifer volumes were close to planned reflecting the continuing high demand for conifer. Demand for hardwood sawlogs also remained high.

Table 6 summarizes changes in the productive forest landbase by working group between 1995 and 2005, together with selected comments from the TAR author where provided.

Table 6. Change in Productive Forest by Working Group (1995-2005).

WG	Approximate Increase/Decrease (x 1000 ha)	% Change	TAR Author's Comment
Pw	-3	-20	Mostly from withdrawals
Pr	-0.3	-30	
Pj	-2	-8	Will increase as plantations come on stream
Sp	-24	-20	Troubling decline reflects changing landscape
Ba	-8	-25	Budworm mortality
He	+1	+2000	
OC	+6	+25	
Mh	-40	-17	Aggressive natural regeneration
By	+10	+29	Reflects inventory changes not silvicultural work
Oh	+9	+3000	Corrections to inventory
Po	+4	+14	
Bw	-56	-25	

Overall trends in renewal activities show that regeneration is keeping pace with harvest area (approximately 17,000 ha harvest versus 19,000 ha renewal). Thinning and improvement cutting increased significantly and will result in higher quality stands and better yields in the future. Clergue has taken advantage of incentives under Ontario Forest Accord Item 11 (Opportunity 1) for low volume stands to conduct improvement cutting in white birch stands. Without stumpage relief these stands could not otherwise be economically operated and would remain as marginally productive forest.

With respect to regeneration success, 93% of even aged and 95% of uneven aged stands harvested between 1991 and 1996 were assessed as FTG by 2004. This is supported by the field observations of the audit team that the renewal program on the Forest is successful.

3.7.4 Achievement of Forest Sustainability

Prior to the implementation of the CFSA the objective of forest management was to provide timber to the forest industry in a manner consistent with sound environmental practices and to provide for other uses of the forest. With implementation of the CFSA in 1995, recognition was given to the importance of forest sustainability. It should be kept in mind that the means of achieving forest sustainability under the CFSA is through the management of forest cover. According to the CFSA, forest sustainability is defined as long-term Crown forest health. Two key principles are associated with forest sustainability:

- *Large, healthy, diverse and productive Crown forests and their associated ecological processes and biological diversity should be conserved.*
- *The long-term health and vigour of Crown forests should be provided for by using forest practices that, within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns while minimizing adverse effects on plant life, animal life, water, soil, air and social and economic values, including recreational values and heritage values.*

An assessment of forest sustainability occurs at the time an FMP is prepared and again following FMP completion, and is reported in the RPFO and/or the Year Seven and Year Ten ARs.

The methods of planning for and assessing the achievement of forest sustainability are described in the FMPM. It begins with an eight-step process that includes gathering background information, setting objectives and developing strategies, identification and analysis of management alternatives, selection of a preferred management alternative, and the identification of specific areas for forest operations. Throughout the process, opportunities are available to the public to participate and provide input into the development of the FMP. The assessment of achievement of forest sustainability involves the analysis of forecasts and trends associated with a set of criteria and indicators of sustainability given in the FMPM.

In developing its opinion on the achievement of sustainability on the Algoma Forest the audit team considered the following:

- 2000-2005 Wawa Forest and Algoma Forest FMPs;
- 2005-2010 Algoma FMP;
- AWSs and ARs associated with the above FMPs;
- 1995-2000 Wawa Forest and Algoma Forest RPFOs;
- Wawa Forest and Algoma Forest Year Ten ARs;
- TAR;
- Input from staff of Clergue, MNR Wawa and Algoma Districts, Clergue shareholders and members of the LCC;
- Written input received by the public;
- Implementation and effectiveness of forest management activities on 23 field sites.

Reasonable management objectives were set during FMP planning and most objectives were achieved. The principal objective not achieved was the planned harvest level. Underachievement was related to forest condition resulting from historical high-grading operations that have left degraded hardwood stands. As a consequence, many of today's stands are only marginally economical to operate. Clergue has worked towards improving stand conditions through application of tree marking and harvesting under Accord Item 11 Opportunity 1, however the benefits of these interventions will take some time to be realized. External market factors were also a significant factor impacting the level of harvesting. Regeneration is keeping pace with harvesting and the regeneration program is generally effective. Maintenance of white pine remains a challenge.

The landbase decreased significantly due to removals for parks and protected areas. This situation should stabilize and further large withdrawals are unlikely. Movement towards the desired future forest condition is somewhat evident, but this will also take time for trends to become clear. It is not likely that the forest will ever approach a pre-settlement condition; however all tree species represented in the pre-settlement forest remain present and landscapes are being managed to be more reflective of natural disturbance regimes. Measures are taken to manage habitat within the estimated bounds of natural variation and specific wildlife values receive protection during planning and operations.

Consideration is also given to Aboriginal interests on the Forest and Clergue and MNR have worked to establish working relationships with area Aboriginal communities. Some discussions have occurred regarding benefits to Aboriginal persons through forest management. Public involvement was apparent through the activities of both LCCs and opportunities were made available for public input into planning. Consideration for the interests of other forest users was also evident. Table 7 summarizes the overall assessment of the Forest's sustainability by the audit team.

Table 7. Summary of Assessment of Forest Sustainability.

Forest Sustainability Criteria	Met (Yes/No/ Partial)	Audit Team Comments
Biological Diversity	Partial	Diversity of trees maintained although proportions of tree species is different than historical natural levels; known biological values protected; modelling predicts declines in habitat for majority of regionally selected wildlife species; movement towards natural disturbance template.
Forest Condition and Ecological Productivity	Met	Harvest levels are regulated; renewal program is keeping pace with harvest; good work to improve stand quality through tree marking in tolerant hardwoods and stand improvement in white birch.
Soil and Water Quality	Met	Soil and water protected from forestry impacts; roads constructed and maintained appropriately; water crossing installations/removals properly done.
Multiple Benefits to Society	Partial	Forestry activities provide significant economic and social benefits locally and provincially; efforts evident to improve fibre utilization and secure markets for low-grade hardwoods; utilization of available harvest area is less than 50%.
Accepting Society's Responsibility for Sustainable Development	Met	Opportunities provided for First Nations and public input, and input considered during planning and implementation; LCCs in both Wawa and Sault Ste. Marie; discussions with interested area First Nations in sharing benefits from forest management.

Based on the information provided and the audit team's review of documentation and examinations of the Forest it is the opinion of the audit team that forest sustainability is being achieved on the Algoma Forest, although improvement in some areas is required, as described in the various Recommendations and Suggestions contained in this audit report.

3.8 Contractual Obligations

Clergue has contractual obligations associated with the Algoma Forest as stipulated in the SFL originally dated December 10, 1997. Conformance with the contractual obligations is a condition of licence extension and was examined by the audit team. The various obligations are listed below with a summary of the audit team's findings for each one.

Payment of Forest Charges
As a condition of timber harvest Clergue is required to pay Ontario Crown charges and Forestry Futures charges. The audit team received confirmation from the Financial Planning, Accounting and Control Section of MNR that these charges were paid during the term of the audit. Annual area charges were set to zero for the duration of the audit term.

Wood Supply Commitments and Overlapping Licences
Appendix E of the SFL licence contains a number of wood supply directives on the SFL licence holder. Most of the commitments were not realized due to lower than planned harvest levels, in some instances lower yields (Pw/Pr sawlogs), and for a lack of demand for tolerant hardwoods. Table 8 details the wood supply commitments and the actual volumes delivered over the five-year period of the audit.

Table 8. Comparison of Wood Supply Commitments and Actual Deliveries (000s m^3).

Company	Species	Annual Volume	Five-Year Total Commitment	FMP Five-Year Total Commitment	Five-Year Actual Received
St. Marys Paper	SPF	127	635	635	517.8
	Po	18.6	93	93	19.7
Weyerhaeuser	Po	50	250	110	122.4
	Bw	80	400	294	49.1
	Tol Hwd	20	100	100	0.2
Midway Lumber	Pw/Pr	5.7	28.5	41	12.3
	Hwd, Bw	2.3	11.5	11.5	12.9
Levesque Plywood	Po (Veneer)	5.5	27.5	13.7	13.3
Total		**309.1**	**1545.5**	**1298.2**	**747.7**

Note: Actual volumes were obtained from MNR TREES report and verified by Clergue.

Other significant commitments from the SFL include Boniferro Mill Works, Sault Ste. Marie (sawlogs and veneer) and Domtar, and Espanola (hardwood pulpwood). All of the companies identified in Appendix E of the SFL, plus Boniferro Mill Works and Domtar are SFL shareholders. No significant wood supply issues were identified by any of the companies. The utilization of tolerant hardwood and white birch fibre products should be addressed in the Marketing Strategy discussed in Section 3.4.2 of this report.

Planning, Reporting, Information Supply and Utilization Requirements
Clergue met its contractual obligations for the preparation of an FMP, work schedules, and reports for the Algoma Forest in accordance with the CFSA and the FMPM.

Salvage Harvesting
No salvage due to natural causes occurred during the term of the audit. Clergue initiated salvage of low volume/low value stands under Forest Accord 11, Opportunity 1 in white birch stands on the Wawa Forest. The objective of these salvage operations was to improve the volume and quality of timber on the site over time. Implementation of this salvage opportunity requires pre-harvest data collection and separation of wood during harvest by Clergue and partner shareholders. Harvest approvals issued under Opportunity 1 receive a reduction in Crown Dues and increased contributions to the Forest Renewal Fund for the management unit. Over 700 ha was completed during the 2000-2005 FMP term. The audit team felt this was a commendable initiative on the part of Clergue and partner shareholder operating on the Wawa Forest.

Forest Protection
A pest management program was not planned or implemented during the audit period. Natural Resources Canada conducted insect surveys and provided yearly updates on insect pest populations and damage to Clergue.

Performance Reviews
An IFA was conducted for the Wawa Forest in 2001. Fourteen Recommendations including licence renewal arose during the Wawa Forest audit. An action plan to address the Recommendations was prepared and dated January 27, 2004, considerably after the required time frame of one to two months following receipt of the final audit report. However, the audit team reviewed correspondence between Clergue and MNR that indicated a version of

the action plan was in circulation in early 2003 and that Recommendations were being acted upon. An audit action plan status report was dated March 9, 2006 within the required period of two years following approval of the action plan. The audit team reviewed the Wawa audit report, action plan and status report and agreed that 12 of the Recommendations were adequately addressed.

An IFA was also conducted on the Algoma Forest in 2001. This audit produced five Recommendations including licence extension. An audit action plan was prepared and dated November 27, 2002, several months past the required time frame, although Clergue had submitted a draft of the action plan on July 12, 2002. An action plan status report dated February 9, 2005 was prepared close to within the required time frame. The audit team concluded that all but two of the Recommendations were adequately addressed. Table 9 summarizes the Recommendations not met, with an explanation by the audit team.

Table 9. Audit Team's Assessment of Previous IFA Recommendations Not Met.

Forest	2001 IFA Recommendation Not Met	Audit Team Comment
Wawa	OMNR and Clergue must review data collection and analysis responsibilities on the Wawa Forest and develop a data collection and analysis program that meets the needs of forest management with reference to the Forest Information Manual and the application of science and technology.	Improvement necessary in the collection of values information in preparation for FMP planning. (Recommendation 3).
	Clergue and OMNR must ensure future FMPs clearly rationalize any forecasting shortfalls in meeting sustainability objectives.	Implications of shortfalls in wildlife habitat must be rationalized (Recommendation 2).
Algoma	OMNR and Clergue must review data collection and analysis responsibilities on the Algoma Forest and develop a data collection and analysis program that meets the needs of forest management with reference to the Forest Information Manual and the application of science and technology.	Woodland hawk nest site trees were not being marked or reported by one operator's tree markers in selection cuts. (Recommendations 4 and 5).
	In order to fulfil (sic) FMP Forest Diversity Objectives, Clergue must expand the use of site preparation and tending techniques to encourage yellow birch, red oak, and hemlock in the non-Boreal regions.	Partially completed. There are a few items listed in the action plan regarding hemlock and oak that have not been completed.

Forest Renewal Trust Account

Clergue is required to maintain a minimum balance in the Forest Renewal Trust Account on March 31 of each year. The minimum balance was exceeded in all years with the exception of the Wawa Forest in 2001 when there was a small shortfall of approximately $4,600. The audit team examined records of the most recent analysis of forest renewal charges and the minimum balance. The analysis was prepared by Clergue for the 2006-2007 year and an adjustment in renewal rates to reduce a significant surplus of funds in the account was proposed. MNR reviewed and approved Clergue's analysis with the caution that rates will have to increase in 2007-2008 to ensure adequate funding remains in place to meet the needs of the silviculture program and minimum balance requirements.

Specified Procedures Audit

The audit team conducted an assessment of 33% of the projects funded under the Renewal Trust Fund for the fiscal year 2004-2005. The assessment determined that the maps, records and field work associated with the Forest Renewal Trust Account expenditures for 2004-2005 were accurate and that the fieldwork was appropriate to the site conditions.

Withdrawals

Where appropriate as described in the SFL document, Clergue received financial compensation when areas were withdrawn from the SFL that contained infrastructure such as bridges constructed by the forest industry.

Silviculture Standards

At the time of signing the SFL, Clergue became responsible for areas harvested that were not yet FTG. As such, Clergue was required to meet silvicultural standards on X and Y lands and undertake tending on Z lands where needed to bring the areas to FTG status.

A summary table showing the amount of X, Y, Z, and Class O lands at the time Clergue signed the SFL was provided to the audit team. There were 1,872 ha of X lands, 1,037 ha of Y lands, 610 ha of Z lands and 1,069 ha of Class O, totalling 4,588 ha which required attention by Clergue on the former Algoma Forest. For X, Y, Z, and O lands combined, 85% (3,882 ha) was FTG and 15% (706 ha) remained as not FTG on the Algoma Forest.

The Wawa Forest had 1,440 ha X lands, 1,497 ha Y lands and 715 ha Z lands at the time of the SFL signing. For the Wawa Forest X, Y, and Z lands combined, 36% (1,304 ha) was FTG and 64% (2,348 ha) was not FTG.

The Algoma Forest 2000-2005 FMP forecasted surveys for 6,560 ha. A total of 6,821 ha were assessed, of which 3,811 ha or 56% was reported as FTG. The Wawa 2000-2005 FMP forecasted surveys for 3,266 ha. A total of 13,352 ha were assessed, of which 6,380 ha (48%) was reported as FTG.

The audit team examined several FTG sites from the air and on the ground during the field audit. The areas were found to be mapped and reported correctly in comparison with the actual work done in the field. The trees met the FTG standards in height and stocking. Stand descriptions were accurate. The new FTG stand descriptions were used to update the FRI. Eligible areas which did not meet FTG standards were tended and/or monitored until they reached FTG status and a re-survey was done.

Aboriginal Opportunities

Clergue is required *to work cooperatively with the Minister and local Aboriginal communities in order to identify and implement ways of achieving a more equal participation by Aboriginal communities in the benefits provided through forest management planning*. This requirement is contained in the Licence and supports EA Condition 34.

Clergue had numerous discussions and meetings with members of Garden River First Nation regarding allocation opportunities and has worked with Garden River Forestry during the audit term. In addition, Clergue had many discussions with the Batchewana First Nation Eastern Yew Coordinator during the audit term. Clergue recently signed a Memorandum of Understanding which outlines a number of initiatives with respect to economic opportunities with Michipicoten First Nation. Michipicoten advised the audit team that relationships with both MNR and Clergue are good. Thessalon First Nation advised that relationships with MNR and Clergue are also good. Although nothing concrete has developed in terms of actual employment numbers, Clergue has shown effort by ongoing meetings and discussions with First Nations. Staff also attended Cultural Awareness sessions hosted by Michipicoten and Mississauga First Nation communities.

Compliance Planning and Monitoring

Clergue, as the SFL Company, has overall responsibility for the compliance program on the management unit. Under the SFL Company's internal structure and division of responsibilities, Clergue partner shareholders are responsible for conducting all access and harvest operations. These were discussed in Section 3.6.1.

Operations on Mining Claims

After receiving the AWS, MNR must contact mining claim holders if forestry operations are planned to occur near their claims. Records associated with AWS notices and approvals indicated these requirements were satisfied.

4.0 Summary of Conclusions and Recommendations

The audit team concluded that, with the exceptions noted in the audit report, management of the Algoma Forest was in compliance with legislation, regulations and policies and was effective during the term of the audit. The Algoma Forest was also managed in compliance with the terms of SFL No. 542257 held by Clergue Forest Management Inc. Forest sustainability is being achieved as assessed through the IFAPP.

Both MNR and Clergue have statements supporting the principles of sustainable forest management and application of the principles was evident during the audit. LCCs were active on both the Wawa District and Algoma Districts and provided support to management of the Algoma Forest in their advisory role to MNR. Some challenges remain with the Wawa LCC in recruiting interest groups currently not represented on the LCC. Consultation opportunities were provided for the public, stake holders and First Nations during planning and input was appropriately considered. Clergue and MNR continue to explore forestry opportunities with interested local First Nations.

The planning process was generally followed but the audit team was concerned about appropriate geographical representation and expertise on the planning team. An adequate range of management objectives and alternatives was developed and analyzed. The audit team made some Suggestions regarding improvements to future modelling efforts. The discussion of objective achievement and forest sustainability in the FMP was well done.

Operational planning generally met requirements, although the audit team noted deficiencies in the collection of values information because of under-funding in Wawa District, and the failure to mark and report nest and cavity trees during tree marking on one operation. There is an obligation on the part of Clergue, operators and MNR to ensure values information is collected and reported so that appropriate protective measures are taken. Ten amendments occurred in the first year of the 2005-2010 Algoma FMP related to the exchange of approved operational harvest blocks with contingency blocks. The reasons for this high number should be assessed and addressed.

The audit team observed excellent results in selection and shelterwood harvest blocks. Most of these stands were highgraded in the past. Clergue and partner shareholders made good efforts to ensure that quality trees were left after harvest, with the objective of improving future stand conditions. Clergue and partner shareholders face challenges managing the tolerant hardwood forest type due to a preponderance of low quality trees, low yields and poor markets for hardwood pulpwood. However, both parties made commendable efforts to address these challenges, including operational investments and the seeking of new markets. However, a comprehensive marketing strategy for underutilized species on the Forest, including white birch, remains to be developed by Clergue and MNR.

Renewal support of the artificial regeneration program, in the form of seed collection and ongoing maintenance of tree improvement installations, was adequate to meet program requirements. FTG surveys were conducted on approximately 20,000 ha during the audit with approximately 10,000 ha reported as FTG. Significant areas of backlog were included in the surveys and account for much of the area not yet FTG. More time is required for much of this area to meet regeneration standards. This is evident in the report of regeneration success contained in the TAR in which greater than 90% success is evident for areas harvested between 1991 and 1996. The audit team confirmed on a sample of sites that FTG survey information collected during the audit term was accurate.

Overall fibre utilization following harvest was quite good, with one exception in which a number of merchantable trees and pieces were left at roadside following a winter harvest operation. This situation was not recorded on either Clergue or MNR compliance inspection reports. The audit team developed Recommendations to address the requirement to utilize merchantable/marketable fibre, and to assess the extent of the utilization issue on the area in question.

Access development was generally well done, with examples of proper installation and decommissioning of water crossings, road construction and maintenance. Improvement is required in establishment and maintenance of aggregate pits.

Adequate system support, in the form of trained and qualified staff within Clergue and MNR, was evident. While documentation was typically complete and accessible, some document control problems were noted although none that pointed to systemic issues.

Monitoring was conducted through various means such as depletion tracking, regeneration and FTG surveys and compliance checks. Reporting of these activities was conducted through preparation of compliance reports, ARs and RPFOs. Some deficiencies were observed related to content requirements for ARs that must be addressed by Clergue and MNR.

With respect to compliance monitoring, the audit team noted that MNR Wawa District had not met timing requirements for sign off of compliance inspection reports. The audit team also believes that some of the NIC observations made by MNR were marginal incidents that may be better addressed through other methods. MNR Sault Ste. Marie District's compliance plan did not meet requirements, although improvement was observed in the most recent compliance plan.

The audit team noted the need for improvement in the compliance program for Clergue and partner shareholders and Recommendations were developed to address these issues.

Reasonable management objectives were set for the FMPs reviewed. All objectives set for the 2000-2005 Wawa Forest and Algoma Forest plans were either met or partially met and acceptable progress was being made towards achievement of most of the 2005-2010 FMP objectives, based on the first year of plan implementation. There was a significant decrease in the managed forest landbase related to withdrawals and planned harvest levels have declined. Harvest area continues to fall short of planned but harvest volumes have improved and the renewal and improvement work conducted by Clergue will contributed to improved future forest conditions.

Clergue met its contractual obligations, with some minor shortcomings as noted in the audit report.

Table 10 provides a summary, by responsible party, of the number of Recommendations and Suggestions identified during the audit. A complete list is given in Table 11.

Table 10. Summary of Recommendations and Suggestions by Responsible Party.

	Clergue	MNR	Clergue and MNR	MNR and LCC	Total
Recommendations	7	7	4	0	18
Suggestions	4	6	1	1	12

Recommendation 18: Based on the outcome of this audit and performance with respect to its contractual obligations, the audit team recommends the Minister extend the term of the Clergue Forest Management Inc. Sustainable Forest Licence No. 542257 to March 31, 2027.

Table 11. Summary of Recommendations and Suggestions.

Principle 1: Commitment

None.

Principle 2: Public Participation

Suggestions:

1: Wawa District Ministry of Natural Resources should continue efforts to expand the membership of the Wawa Local Citizens Committee to include the interest groups identified in the Local Citizens Committee Terms of Reference and the Forest Management Planning Manual.

2: Sault Ste. Marie District Ministry of Natural Resources office should ensure that a cross reference be made in the First Nation Documentation binder if information is filed elsewhere.

Principle 3: Forest Management Planning

Recommendations:

1: The Ministry of Natural Resources must ensure that the Algoma Forest planning team includes appropriate geographical representation and expertise for all resource management issues.

2: Corporate Ministry of Natural Resources must ensure, when a selected management alternative causes significant loss of habitat for a species in the context of the forest management unit, that the habitat implications are examined for that species at the eco-regional scale.

3: Corporate Ministry of Natural Resources must provide:
   a) sufficient funding for Wawa District to collect and provide verified values information (MAFAs, stick nests, etc), and
   b) a high potential cultural heritage value model run in a timely manner to facilitate input into the 2010-2020 Algoma Forest management planning process.

4: Clergue must review tree marking requirements with their contractors as they relate to nest and cavity tree identification and retention.

5: Clergue must ensure compliance to requirements for reporting new values encountered and recognized during the implementation of forest management operations.

6: Clergue must review the Area of Concern supplementary documentation in preparation for the 2010-2020 Forest Management Plan for prescriptions for which there is no guideline or the guideline does not give specific direction for the protection of a particular value, to ensure there is the consideration of alternatives in the development of the final prescription or a rationale as to why there was not.

7: The Ministry of Natural Resources must provide adequate training for plan reviewers and supervise the review process to ensure the list of required alterations is appropriate.

8: Clergue must follow the 2004 Forest Management Planning Manual requirements for inclusion of Category 14 pits in the Annual Work Schedule.

Suggestions:

3: During preparation of the 2010-2020 Forest Management Plan, Clergue should:
   a) review and revise unharvested volume proportions and accumulating reserve assumptions to adjust for existing reserves and NDPEG residual target percentages at the disturbance level,
   b) revise harvest area forest unit stability constraints to allow flexibility in projected harvest areas which may enhance socio-economic benefits from the forest, and
   c) revise forest renewal limits by proportion for the base model to reflect biological/ecologically based limitations. Expand renewal limits in the Proposed Management Strategy to include additional management decisions if warranted.

4: The Ministry of Natural Resources should address strategic roads planning at scales above the Sustainable Forest Licence level in the Sault Ste. Marie and Wawa area to provide the Sustainable Forest Licence holder and other resource users an opportunity for input into a Crown Land access strategy.

Table 11 continued.

Principle 3: Forest Management Planning (continued)

Suggestions:

5: Clergue and the Ministry of Natural Resources should evaluate and address the reasons for the high number of amendments involving substitution of contingency area for approved allocations.

Principle 4: Plan Implementation

Recommendations:

9: Clergue and partner shareholders must ensure all merchantable/marketable wood is processed based on approved utilization standards.

10: Clergue and the Ministry of Natural Resources must assess the harvest block in Whitman Township to determine and document the full extent of the utilization issue.

11: Clergue and the Ministry of Natural Resources must develop a comprehensive marketing and utilization strategy for underutilized forest products on the Algoma Forest.

12: The Ministry of Natural Resources and Clergue must ensure that aggregate pit permittees for pits used for the construction and maintenance of forest management roads on the Forest comply with the requirements of the Aggregates Resources Act.

Suggestions:

6: Clergue should seek advice and monetary support to establish and tend small white pine demonstration areas.

7: Clergue should ensure grader operators properly crown roads and avoid creating berms on the shoulders of roads, especially on approaches to water crossings.

Principle 5: System Support Services

Suggestion:

8: Wawa District Ministry of Natural Resources should receive mapping changes with all Annual Work Schedule revisions.

Principle 6: Monitoring

Recommendations:

13: The Ministry of Natural Resources must ensure Forest Operations Information Program reports are signed off within the required timelines.

14: The Ministry of Natural Resources must ensure that internal compliance planning guidelines are followed.

15: Clergue and partner shareholders must:
  a) conduct inspections and submit Completed or Suspended Operations reports within the timeframes in the Forest Information Manual and the Forest Operations Information Program Inspection Policy, and
  b) ensure that all compliance incidents are accurately reported and follow Forest Operations Information Program reporting requirements.

16: Clergue and partner shareholders must ensure:
  a) all environmental concerns are resolved/corrected in a timely manner, and
  b) adequate training and/or supervision of operators is carried out on all operations.

17: Clergue and the Ministry of Natural Resources must ensure that Annual Reports and Year Ten requirements meet all requirements and timelines of the Forest Management Planning Manual.

Suggestions:

9: The Ministry of Natural Resources should consider all options to achieve compliance objectives for minor incidents when completing forest operations inspections.

Table 11 continued.

Principle 6: Monitoring (continued)

Suggestions:

10: Clergue should take direct responsibility for auditing inspections conducted by partner shareholders or use other means to ensure data are complete and accurate.

11: The Ministry of Natural Resources should provide differential values for indicators of forest sustainability that reflect their relative importance.

12: The Ministry of Natural Resources should ensure that no changes to the suite of indicators of forest sustainability are made without compelling reasons.

Principle 7: Achievement of Management Objectives and Forest Sustainability

None.

Principle 8: Contractual Obligations

None.

Conclusions

The audit team concluded that, with the exceptions noted in the audit report, management of the Algoma Forest was in compliance with legislation, regulations and policies and was effective during the term of the audit. The Algoma Forest was also managed in compliance with the terms of SFL No. 542257 held by Clergue Forest Management Inc. Forest sustainability is being achieved as assessed through the Independent Forest Audit Process and Protocol.

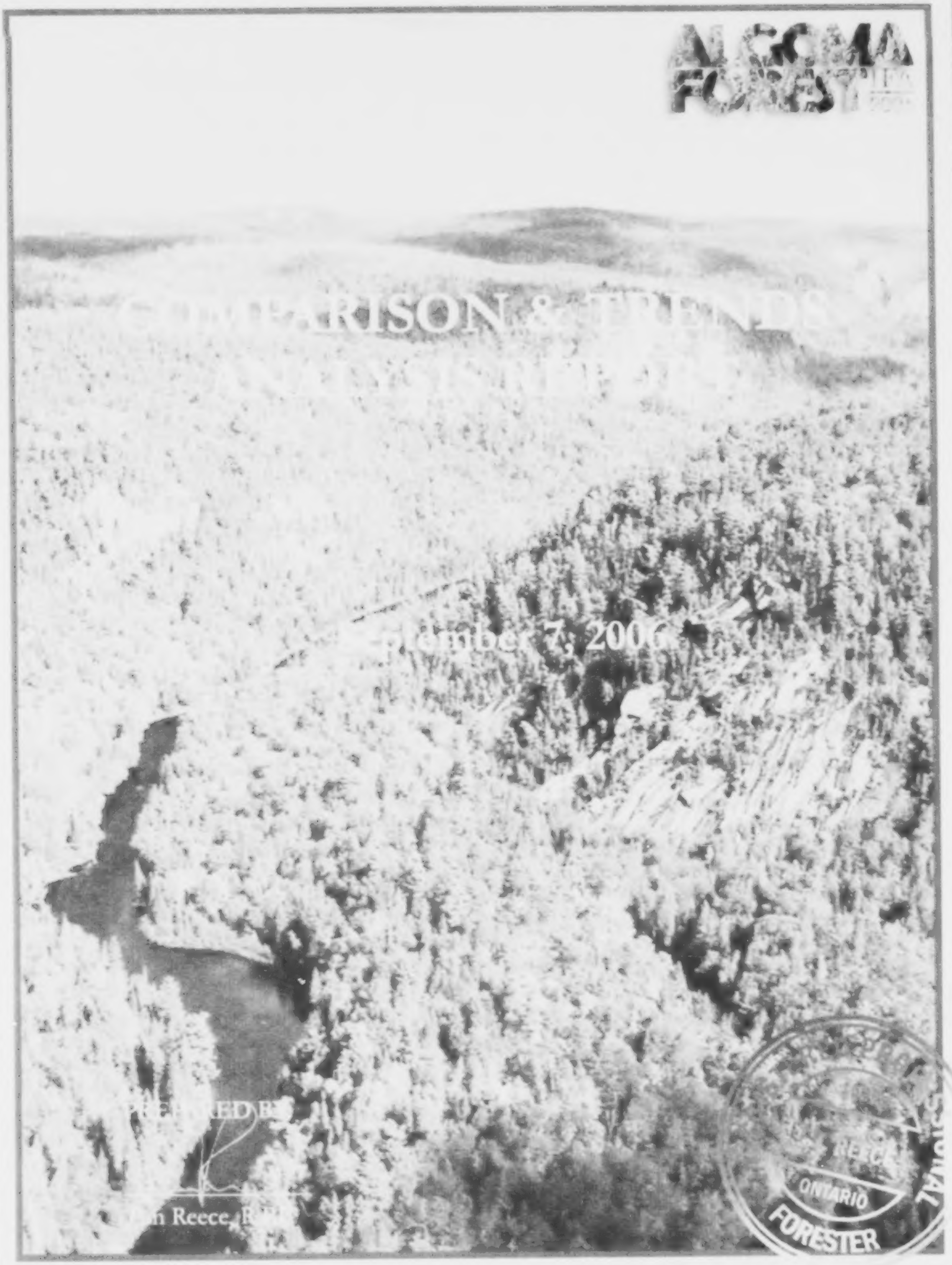
Recommendation:

18: Based on the outcome of this audit and performance with respect to its contractual obligations, the audit team recommends the Minister extend the term of the Clergue Forest Management Inc. Sustainable Forest Licence No. 542257 to March 31, 2027.

Appendix A

Comparison and Trend Analysis of Planned versus Actual Forest Operations Report

ALGOMA FOREST



COMPARISON & TRENDS

[illegible]

September 7, 2006

PREPARED BY

[illegible] Reece, R.P.F.

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1.0 INTRODUCTION

The Comparison and Trends Analysis of Planned versus Actual Forest Operations Report for the Algoma Forest 2006 Independent Forest Audit has been prepared using information from plans that were approved for the three planning terms; 1995-2000, 2000-2005, and 2005-2010. Historically, the Algoma Forest was divided into two Crown management units; the Algoma, and the Wawa Crown Management Unit. Plans for both of these units were prepared for the planning terms 1995-2000 and 2000-2005. In 2005, these units were amalgamated into one Sustainable Forest licence called the Algoma Forest. The Ontario Ministry of Natural Resources (OMNR) prepared the Timber Management Plans (TMP)for the period 1995-2000, and Clergue Forest Management (Clergue) prepared the Forest Management Plans (FMP) for the period 2000-2005, and 2005-2010.

Clergue is the Sustainable Forest License (SFL) holder on the Algoma Forest. The Algoma SFL (542257) was dated December 10, 1997. As of that date, Clergue took over the formal responsibilities of an SFL holder. Clergue is a cooperative SFL with six partners; Boniferro Mill Works in Sault Ste. Marie, Columbia Forest Products Ltd. in Hearst, Domtar Inc. in Espanola, Midway Lumber Mills Ltd. in Thessalon, Weyerhaeuser Inc. in Wawa and St. Marys Paper Ltd. in Sault Ste. Marie. Boniferro Mill Works is a hardwood lumber mill utilizing pre-dominantly tolerant hardwood. Columbia Forest Products operates a veneer mill that processes poplar. Domtar Inc. in Espanola operates a mill that produces fine papers, specialty and packaging papers from hardwood and softwood pulpwood. Midway Lumber Mills Ltd. produces hardwood, spruce and pine lumber. Weyerhaeuser produces oriented stand board from poplar and white birch. St. Marys Paper produces super-calendered specialty paper from spruce and poplar. Boniferro Mill Works, Domtar, Midway Lumber Mills and St. Marys Paper receive a portion of their wood supply from the Algoma Forest.

The specific tables required for this report can be found in appendix 1.

2.0 SUMMARY OF TOTAL AREA UNDER MANAGEMENT

Information on the area under management is found in Table 1. The area addressed is managed Crown land only. The source for this information is:

- Table 4.8.1 (1995-2000) Algoma & Wawa TMPs
- FMP-1, 2 (2000-2005) Algoma & Wawa FMPs
- FMP-1, 2 (2005-2010) Algoma

The table summarizes the area in hectares for the three planning terms. The data for the planning term 1995-2000 was derived from the forest resources inventory based on aerial photos that were taken in 1981 and updated mechanically to 1995. The data for the two planning terms, 2000-2005 and 2005-2010, was based on aerial photos taken in 1994 and updated to the start of the planning terms. The reduction in total forested land between the 1995-2000 and 2000-2005 term was due in large measure to Ontario's Living Legacy (OLL) Initiative and corrections to the status of land tenure from one inventory to the next. The total area reduction between the two planning terms is 130,025 hectares. Another 11,445 hectares was lost from the 2000-2005 plan to the 2005-2010 plan with refinement and regulation of the OLL boundaries and minor land tenure changes.

The Algoma Forest saw a significant reduction in the area available for timber production as a result of the OMNR's efforts to increase the areas in parks and protected areas through the OLL Initiative. Prior to this initiative, about 10,000 hectares were encompassed by parks and protected areas on the Algoma Forest. With regulation of the OLL areas, approximately 12% of the Algoma land base is now protected in park or conservation reserve. The total land base as noted in FMP-1 of the Algoma Forest 2005-2010 Forest Management Plan reflects the above reduction in land base.

Although the three columns in table 1 are not directly comparable, several inferences can be made about the land classes and species composition (working group) of the Algoma forest. The amount of protection forest has declined. This is based on the interpretation of 1994 photos. The amount of barren and scattered (B&S) and not-sufficiently regenerated (NSR) forest has declined from the 1995-2000 period. This can be credited to the use of the new 1995 inventory for the 2000 and 2005 FMP. The increase from the 2000 to the 2005 FMP can be attributed partially to an underestimate in forecast harvest area for the preparation of the 2000 FMP, and over-estimate in the development of the 2005 FMP. The amount of actual depletion to March 31, 2005 was far less than was used as forecasted in the planning cover for the 2005 FMP. Clergue is aware of the substantial backlog of B&S/NSR lands inherited when they became the managers of the forest. Clergue conducts Free-Growing Regeneration Assessments annually, and consistently returns more area to forested cover than what is depleted annually.

3.0 DESCRIPTION OF FOREST UNITS

Forest units are an aggregation of forest stands for management purposes that have similar species composition, develop in a similar manner (both naturally and in response to silvicultural treatments), and are managed under the same silvicultural system. Forest units are described in:

- FMP-8 (Algoma & Wawa 2000-2005, Algoma 2005-2010) Description of Forest Units,
- Table 4.11 (Algoma & Wawa 1995-2000) Silvicultural Ground Rules For Normal Operations and a description of forest units in the Algoma Timber Management Plan (1995-2000)

The forest units from one plan-term to the next are not directly comparable because the parameters used to develop them are not the same. In Table 2 of this report, Clergue has described the forest units from the five different plans: Algoma (1995-2000); Wawa (1995-2000); Algoma (2000-2005); Wawa (2000-2005); and Algoma (2005-2010). Presently, the only 'true' forest classification that can be used for comparative purposes is the working group. This comparison can show general trends in species composition and successional changes. An evaluation of working group trends is provided in the section "Summary of Managed Productive Forest by Working Group".

4.0 SUMMARY OF PLANNED AND ACTUAL HARVEST VOLUMES

Table 3 provides a summary of the planned and actual harvest volumes for the planning terms 1990-1995, 1995-2000, and 2000-2005. This table provides the planned volumes for the term 2005-2010. The 1990 figures have been presented as the information was readily available and would not detract from the required information portrayed. This information was derived from:

- FMP-23 Forecast of Wood Utilization by Licensee (2000-2005, 2005-2010)
- Table RPFO-4 (Algoma & Wawa 1995-2000) summary report of wood utilization by licensee
- Table AR-4 of the Algoma & Wawa 2004-2005 Annual Reports
- Tables 4.3.1 (1990-1995) Report of Wood Utilization by Licensee for the Goulais Batchawana, Ranger Lake and Sault Ste. Marie Crown Units
- The actual harvest volumes are derived from the Provincial Timber Scaling and Billing System.

The total planned volume has declined approximately 30% over the three planning terms from 1990 to 2005. This over all decline masks some significant reductions and increases. The planned volume of white and red pine has declined by approximately 80%. This can be attributed to high acceleration factors used in the past to harvest over mature wood. Most of the concentrated areas of white and red pine have now been cut using a clear cut or seed tree method. Areas of old growth white and red pine which were not harvested have in large measure been removed from the timber producing land base and placed in parks or protected areas. Jack pine, spruce and balsam fir volumes have declined significantly. In large measure, the balsam fir and white spruce volumes have been decimated by the spruce budworm. Acceleration factors increased harvest volumes recognizing that in the longer term levels would decline. In the Forest Management Plan for the term 2000-2005 a conscious effort was made to provide for a more even flow of boreal conifer material into the future. Reserves and other timber losses to address the provision of forest values has reduced the available timber resource. The other conifer volume has seen a reduction in part because of the importance of this working group to the provision of wildlife habitat particularly within the tolerant hardwood forest. Other conifer area was not allocated and volume targets in models were kept low. The planned white birch volume has declined not from accelerated harvests but as a result of a more reliable inventory and increased levels of protection. Interestingly, the planned tolerant hardwood volume has increased steadily over the three periods. This can be explained in part by larger yields per hectare with the recent development of a tolerant hardwood pulpwood market.

Of interest is that although the planned harvest volume from 1990-1995 to 2000-2005 significantly decreased, the actual utilization between the two periods are almost identical. This observation, with the data presented in Table 4, identifies an obvious increase in yields per hectare. This can only be attributed to increased utilization of: low-grade pulpwood; smaller-diameter material; and, all species on the harvest block.

An approximately eleven percent increase from the 2000 FMPs to the 2005 FMP relates to the amalgamation of the former Algoma and Wawa Forests, and relaxation of volume modeling parameters recommended in the 2001 Independent Forest Audits. It is commonly noted that management unit amalgamations provide for increased flexibility within forest models to meet management objectives. The Algoma and Wawa 2001 Independent Forest Audits suggested modeling parameters used in the development of the 2000 FMPs restricted harvest volume flow. With the development of the Algoma 2005 FMP, these observations were incorporated into the modeling for the FMP.

Total actual harvest volumes are less than planned volumes by at least 50% over all planning terms. The actual conifer harvest volumes match closely to planned volumes being reported on. This reflects the continuing high demand for these species and products. Hardwood logs continue to be in high demand. Prior to 1995, there was no market for hardwood pulpwood. This resulted in a substantial undercut of all hardwoods.

5.0 SUMMARY OF PLANNED AND ACTUAL HARVEST AREA

Table 4 provides a summary of planned and actual harvest area by forest unit for the periods 1990-1995, 1995-2000, 2000-2005 and the planned harvest for the period 2005-2010. This information can be found in:

- FMP-18 (Algoma & Wawa 2000-2005, Algoma 2005-2010) Forecast of Harvest Area
- RPFO-2 (Algoma & Wawa 1995-2000) Draft Summary Report of Depletion Area Comparison to the Selected Management Alternative provides a comparison of the planned harvest to the actual harvest
- Table AR-4 for 2004-2005 AR (Algoma & Wawa 2000-2005)
- Table 4.16 (Algoma & Wawa 1990-1995)

The total planned harvest area has generally declined over the period from 1990 to 2005 by approximately 30%. The decline is particularly significant in forest units other than the tolerant hardwoods. Reductions to the productive forest from increases in parks and protected areas (<1% in 1990 to ~12% in 2005) and increased reserve areas from new and modified guidelines (~10% of productive forest in 2005) have contributed to reduced allowable cuts. Figure 1 identifies forest unit areas provided in Area of Concern (AOC) prescriptions in the Algoma 2005 FMP.

Figure 1: Proportion of Managed Crown Forest associated with AOC Prescriptions and/or OMNR Guidelines for the Algoma 2005-2010 FMP Period

2005 FMP FU	Proportion of Managed Crown assigned to AOC Reserve (%)	Additional Area Sacrificed to Natural Disturbance Pattern Emulation Guideline (%)	FU Total (%)
BwHd1	11.1	1.1	12.2
BwHd2	8.9	0.0	8.9
ByUS	10.8	7.5	18.3
HdSel	3.8	13.0	16.8
HdUS	6.3	1.0	7.3
MxC	18.9	0.0	18.9
MxH	11.4	2.6	14
MxW	14.4	0.0	14.4
OcAll	10.4	0.0	10.4
PjPur	10.4	0.0	10.4

PoPur	10.7	5.0	15.7
PrCC	13.7	0.0	13.7
PwrUS	10.3	2.9	13.2
SbPur	14.7	0.0	14.7
Average	**10.4**	**3.3**	**13.7**

Historically, boreal mixedwood forest cover types saw minimal harvesting because of low yields per hectare, an absence of coniferous species, a lack of quality products, and often difficult terrain. The majority of the boreal mixedwoods on the Algoma are forest stands that were previously partially harvested (high-graded) for spruce and pine.

Clergue Forest Management has recognized the importance of utilizing the wood fiber from these forested areas, and the need to rehabilitate this area back to a more productive, conifer enriched state. With aid from the OMNR under the Ontario Forest Accord Item Eleven, Opportunity 1 initiative, Clergue has been able to actively harvest in some mixedwood forest stands that previously would not have been economically possible. The OMNR and forest industry need to continue to work together to provide additional opportunities to increase harvest in these low yielding, high operating cost sites as noted in Recommendation One of the Wawa 2001 IFA Report.

6.0 SUMMARY OF MANAGED PRODUCTIVE FOREST BY WORKING GROUP

Tables used in assessing the managed productive forest are as follows:

- FMP-2 Summary of Productive Forest by Working Group.
- Table 4.8.1 and table 4.9 for the period 1995-2000
- Table 4.8.2 and table 4.9 for the Goulais Batchawana, Ranger Lake and Sault Ste. Marie Crown Management Units for the period 1990-1995.

As mentioned in the earlier forest unit description section, the comparison of forest units from one plan to the next is impossible as they often change. Landbase adjustments and the creation of a new Forest Resources Inventory in 1995 on the Algoma and Wawa Forests have compounded this issue. For these reasons, Clergue Forest Management has decided to compare working group from the various plans in Table 5. The definition and application of Working Group, dominant tree species, has remained a constant as long as it has been in use. Figure #2 summarizes the information in Table 5 for the Crown productive forest by working group for three terms.

Figure #2: Crown productive forest by working group for each of the three terms

Working Group	1995-2000 (hectares)	2000-2005 (hectares)	2005-2010 (hectares)
White Pine	16,098	13,254	12,955
Red Pine	951	649	629
Jack Pine	26,505	20,097	24,363
Spruce	117,795	95,807	92,911
Balsam Fir	32,024	22,873	24,026
Hemlock	48	1,076	1,070
Other Conifer	24,920	32,338	31,682
Hard Maple	237,182	214,850	196,710
Yellow Birch	34,306	43,665	44,634
Other Hardwoods	274	5,319	8,851
Poplar	28,695	46,047	31,167
White Birch	225,944	171,329	170,309
Total	744,742	667,304	639,307

Several coarse observations can be made about the changes to the areas in the working groups.

- There were significant changes with working group areas from the 1985 FRI (reported in the 1995-2000 period) to the 1995 FRI (reported in the two later periods). Some differences from the two FRIs cannot be explained (e.g. Hemlock) as a spatial comparison between the two has never been conducted. The 1985 FRI was never available in a digital format to make landscape analysis comparisons difficult.
- The reduction in the white pine working group can be attributed largely to the inclusion of area in parks and conservation reserves. Small portions of white pine area identified in the 1995 FRI as plantations were failures, and they have regenerated successfully to intolerant hardwood forest types.
- Prior to Clergue Forest Management taking over the management of the Algoma Forest, considerable effort was taken by OMNR to establish pure white pine plantations across the forest. Unfortunately, due to a lack of tending efforts by OMNR and the occurrence of white pine blister rust on the Forest has resulted in a large number of these plantations failing.
- The reduction in the jack pine and spruce working groups is reflected by the forest resources inventory generated from the 1994 photographs. The decline in jack pine area will be reversed as areas are declared free-to-grow and other forest units are planted to jack pine. The decline in the spruce working group is more troublesome as it reflects an appreciable change on the landscape. It can be surmised that there are a host of reasons for this including; the conversion of upland spruce sites after harvesting to other species, a lack of silvicultural funds to carry out effective spruce renewal, successional processes, spruce budworm damage in white spruce stands and areas not yet considered free to grow. The loss of the white and black spruce within the southern tolerant hardwoods has been a subtle ecological change. This poses a substantive silvicultural challenge into the future.
- The balsam fir working group has declined because of mortality caused by spruce budworm defoliation.
- The tolerant hardwood working groups are generally persisting on the landscape. Hard maple is particularly aggressive at dominating sites that once supported a more mixedwood forest of white pine, white spruce, yellow birch and red oak. Changes from the 2000 to the 2005 period can be attributed to two things: (1) refinement of the parks and protected area boundaries; and, (2) adjustments to the FRI from field cruise data.
- The status of yellow birch is more evasive. The increased area that is noted in figure #2 has more to do with the recent inventory than actual improvements on the landscape. Silvicultural activities in the past have been successful in regenerating yellow birch. Treatments such as removal cuts, which are an integral component of shelterwood harvesting and crop-tree release, must be pursued to ensure yellow birch is a persistent component of the forest.
- The increase of soft maple (other hardwoods) from the 2000 to 2005 period is largely as a result of corrections made to the 1995 FRI. Many soft maple stands were identified as either white birch or hard maple stands in the original inventory, and has been corrected.

7.0 SUMMARY OF RENEWAL, TENDING AND PROTECTION OPERATIONS

The information summarizing renewal and maintenance can be found in:

- Table 4.19 (1995-200) Forecast of Renewal and Maintenance Operations
- RPFO-7 (1995-2000) draft summary report of renewal, tending and protection
- FMP-25 (2000-2005, 2005-2010) Forecast of Renewal and Tending Operations
- AR-7 (2004-2005) Annual Report of Renewal, Tending and Protection Operations

During the term 1995-2000, there was a general underachievement of planned targets. This was because the targeted harvest levels were not achieved; consequently renewal efforts were not required. Selection and shelterwood marking in the tolerant hardwood forest units began in 1995 with the development of dependable markets for tolerant hardwood pulpwood. This improved market condition was a defining moment in the improvement of forest practices on the Algoma Forest. Funding sources like the Forestry Futures Fund for tolerant hardwood stand improvement is critical on the Forest to meet silvicultural requirements to remove un-merchantable poor quality stems to promote the growth and development of Acceptable Growing Stock (AGS) quality trees through the next harvesting cycle.

The planned selection and shelterwood harvest for the term 2000-2005 was considerably expanded because the demand for tolerant hardwood pulpwood particularly maple was significantly accelerated. Levels of intensive hardwood silviculture on the management unit continued to increase during this period in the form of crop tree release. The first thinning project was initiated in the spring of 2001. Clergue continues to seek opportunities to perform crop-tree release on stands that have regenerated to either white or yellow birch from past treatments. Thinning is performed by local cutters who would be otherwise laid off during the spring break-up and bark peel period. This provides these cutters with a steady flow of income throughout the year that was otherwise unavailable in the past.

Planting levels on the Algoma Forest during the 2000-2005 planning term were significantly higher than planned when comparing area artificially regenerated to the area managed under the clearcut silviculture system. The amount of site preparation and tending is in line with planned projections for the management unit. The widespread use of the OFA-11 Opportunity 1 in white birch dominated stands has increased the opportunities to increase conifer enhancement in areas that have been previously harvested and left in a degraded state with low volumes and poor quality products. These operations are ongoing and significant investment has been made improving the quality of growing stock on stands that would have otherwise been avoided in the past.

8.0 HARVEST AREA SUCCESSFULLY REGENERATED

Table 7 provides information on the area successfully regenerated after harvesting during the period 1991 to 1996. The Algoma Forest was divided into two Crown management units during this period; the Algoma and Wawa. Table 7 summarizes the total area harvested, and the amount of area that has been declared successfully regenerated since then on both management units.

The information for this table is derived from tables RPFO-2, RPFO-8, RPFO-9 from the Algoma and Wawa 1990-1995 Report of Past Forest Operations, AR-1 from the Algoma and Wawa 1995-1996 Annual Report, RPFO-8 from the Algoma and Wawa 1995-2000 Report of Past Forest Operations, the Algoma 1995 Forest Resources Inventory, and Annual Report Tables AR-7 and AR-8 for the Algoma and Wawa Forests 2000 through 2004.

As noted in the table, 93% of even-aged management and 95% of uneven-aged management stands harvested during the 1991-1996 period have been successfully regenerated. Of areas harvested during this period there was a general lack of commitment by forest managers to complete regular regeneration assessments to ensure the forest resources inventory was up to date. Clergue has spent considerable time and effort assessing the backlog of areas not yet declared free-to-grow. The results of these surveys can be found in Table 7.

Since the formation of Clergue, artificial regeneration levels on the management unit have increased significantly over past plan terms and are expected to result in areas becoming free-to-grow earlier with higher stocking levels into the future. There is a general trend for areas to be regenerated to jack pine conifer, spruce conifer and poplar or white birch hardwood stands. Recently there has been a slight reduction in the white birch dominated forest unit area due to stand conversion to white spruce as a part of Clergue's conifer enhancement targets.

Moving forward it is expected that the time to reach free-to-grow will continue to shorten as silvicultural prescriptions are developed to maximize tree growth through site manipulation and improved seedling growth. The 2005-2025 Forest Management Plan's silvicultural ground rules were developed using the most up-to-date information and knowledge of tree responses in relation to treatment activities on the Algoma Forest.

For the 1991-1995 periods, the tolerant hardwood working groups identified in Table 7 as uneven managed and not sufficiently regenerated were generally harvested on a partial cutting system leaving behind a low stocked residual overstory of poor quality trees. With the new inventory in 1994, these areas were typed out as poorly stocked mature tolerant hardwoods forests accounting for area identified as not sufficiently regenerated or barren and scattered. Clergue will continue to assess these backlog areas as they regenerate naturally to tolerant hardwood species and declare them successfully regenerated as they come online.

9.0 ACHIEVEMENT OF OBJECTIVES ESTABLISHED IN THE 2000-2005 FMPs

Considerable effort was spent documenting in the Algoma and Wawa Forests 2004-2005 Annual Reports the achievement of 2000-2005 FMP objectives. The following two sub-sections is the objective achievement text from the two OMNR approved annual reports.

The Text below was copied from the 2000-2020 Forest Management Plans. *Assessments of the achievement of objectives are described below the targets in italicized text.*

9.1 THE 2000-2005 ALGOMA FMP

A. FOREST SUSTAINABILITY

1. Forest Diversity
The management of the Algoma Forest aims to achieve a forest diversity that is in accordance with the following objective.

Objective:
To provide for forest diversity over time that:
maintains the *total Crown forested land* on the management unit;
emulates, within the bounds of silvicultural capabilities, patterns of natural disturbance at the landscape level;
results in a future forest condition with a species composition which is characteristic of the natural ecosystems of the region;
results in a future forest condition with an age class structure that falls within the bounds of natural variation over time;
maintains and restores old growth characteristics as a component of the desired future forest condition;
emulates, within the bounds of silvicultural capabilities, structural components of the natural forest at the stand level;
maintains genetic diversity of tree species; and
incorporates all the Crown land classifications on the Forest.

Targets:
The above Forest Diversity strategies will be employed in a manner that will best achieve the following targets in the desired time period.
Area of Crown Forested Land Target
This target is intended to maintain the area of total Crown forested land as a landbase which contributes to the overall forest diversity on the management unit. This is a total of the Crown land area in parks, managed and unmanaged land, all of which contribute to the overall biodiversity and ecological targets for the management unit.

	Forested Area (ha)		
	Year 2000	Year 2010	Year 2100
Total Crown Forested Land	453,665	453,665	453,665

No net loss (from current levels) in total Crown forest area of the PwrUS and PwrST forest units;
Increase the production forest area in PwrST and PwrUS forests units by 100 hectares over the term of Plan, 400 hectares over the first 20 year period leading toward a future forest condition (in 100 years an increase of 16% or 2000 hectares) that more closely resembles the historic forest condition. The total area in the two forests

units at the year 2000 is 12870 hectares with 9691 hectares in the PwrST forest unit and 3179 hectares in the PwrUS forest unit.

Historic Forest Condition Target
During the term of this plan, compile available information and, based on this information, describe the historical forest condition for Site Region 4E-3, 5E-1, and 5E-2.

The application of approved silvicultural ground rules on the Algoma Forest has lead to the assurance that there will be no net loss in total area classified as the PwrUS and PwrST forest units. All stands managed under the clearcut with seed trees prescription retained 12-35 healthy white pine trees per hectare as seed trees and to emulate natural disturbance processes. White pine stands managed under the uniform shelterwood system were tree marked by certified tree markers prior to harvesting to ensure that crown closure and residual tree targets were met. The use of these silviculture techniques will ensure that white pine ecosystems on the Algoma Forest are maintained.

A total of 46,000 white pine seedlings were planted on the Algoma Forest in 2003 to increase the productive forest area on the management unit in the PwrUS and PwrST forest units. This planting in addition to the 74 hectares of PwrUS and PwrST declared free-to-grow will begin to increase the level of white pine on the management unit. The use of mechanical site preparation and chemical tending has increased on the PwrUS forest unit to take full advantage of natural seed production and maintain the genetic diversity of the forest.

There has been no reported net loss in productive crown forest during the term of the plan. Clergue has taken measures such as slash piling and burning where possible to maximize the recovery of area that would have otherwise been occupied by slash for at least one harvest rotation. There were no major changes to the land ownership on the Algoma Forest between 2000 and 2005. Area set aside in the Lands for Life process and Megisan Lake EA have been incorporated into the FMP through amendments where required.

Clergue in conjunction with OMNR began work on classifying the pre-industrial forest condition as a part of the development of the 2005-2010 Algoma Forest FMP. The initial report identified species changes on the Algoma Forest since the early 1900's. Work is ongoing to complete a pre-industrial forest condition report, however, in the author's opinion, the relevance of this report in the application of sustainable forestry practices and setting targets and goals for species composition must be questioned due to the ever changing environmental conditions in Northeastern Ontario and the introduction of invasive pests.

There have been no significant changes to the forest composition and age class structure over the term of the plan

Old Growth Age Class Distribution Targets

The table below presents the proportion of each Forest Unit that is designated as Old Growth. The tolerant hardwood selection forest unit has not been included because of its all aged structure. The red pine forest unit has been assigned to red pine plantations which will not be managed for old growth. The white/red pine forest units have been amalgamated for old growth target establishment. The mixed hardwood forest units have been amalgamated to reflect the total range of site classes in this combination. The first column contains those forest units that will provide a representative proportion of the old growth area on the Algoma Forest and the second column identifies the lower limit of the old growth age class for the respective forest units. The forest unit area and percentage of old growth in each forest unit is shown for the beginning of the planning period (2000), the end of the second ten year term (2020 Target), and the desired future forest condition (Future Forest in 100 years). These targets represent the minimum area for each forest unit that is required to achieve the old growth objective of maintaining or restoring old growth characteristics as a component of the desired future forest condition.

Forest Units	Old Growth Age Class	Area and % of Forest Unit Area in Old Growth Age Class by Time Period					
		2000		2020 Target		Future Forest in 100 years	
		ha	%	Ha	%	ha	%
BwCC	95+	310	6	270	5	235	5
MxC	95+	4,930	11	2266	5	3248	5
MxdH1&2	95+	3,320	4	4021	5	1918	5
PjCC	105+	89	1	532	5	673	5
PoCC	95+	209	7	191	5	306	5
PwrUS/ST	125+	9959	40	6556	25	7037	25
SbCC	145+	119	1	889	5	1,362	5
HdUS	135+	11,772	12	9,890	10	11,740	10
OcUS	135+	3,915	13	8,411	30	6,757	30

The use of table RPFO-14 for assessing the achievement of old growth targets is difficult due to the ages used in identifying the onset of old growth in the 2000 FMP. Since harvesting allocations were determined on the basis of the sustainable selected management alternative it is assumed that the general trend for old growth on the management unit is within ± 20% of the bounds of natural variation for the management unit.

Forest Unit Trends Target

The targets shown in the table below are intended to provide a long term pattern of forest unit areas that emulates a natural disturbance regime. The landbase used for the calculation and maintenance of these target areas is the "available/production forest" landbase.

The table contains the current area for each forest unit, the target ranges for the maintenance of forest units overtime, and the trend over a 100 year period. The range over 100 years and the trend are based on the natural disturbance scenario as represented in the Nul! alternative (without fire suppression), which is described later in this section.

Area by Forest Unit	Forest Units (FU)													
	PrCC		PwrST	PjCC	SbCC	PoCC	BwCC	MxC	MxH1	MxH2	PwrUS	HdUS	OcUS	HdSel
Current Area (ha)	406		9691	8043	14294	2207	2923	36783	38806	23746	3179	87623	26800	129291
Target Range (ha) Over 100 years	High	406	11936	11357	22200	5055	3467	50926	38806	23746	7030	102629	26800	129291
	Low	133	9691	8043	14133	2207	2923	36783	20311	8228	3179	87623	20034	129291
Trend over 100 yrs.		⇩	⇧	⇧	⇧	⇧	⇧	⇧	⇩	⇩	⇧	⇧	⇩	⇔

All of the forest units on the Algoma Forest are currently with the bounds of natural variation on the management unit with the exception of the MxH2 forest unit. The area in the MxH2 forest unit has increased from 23,746 ha to 24,896. This is largely due to the results of free-to-grow assessments of past forest management practices. Table RPFO-13 contains the data substantiating the previous statement. None of the results of renewal activities performed during the term are incorporated into the end of term values. It is generally up to 10 years after harvesting before renewal efforts are recognized in the available planning cover. Once current renewal activities become incorporated into the available production forest there may be some greater shifts in forest unit distribution on the landbase.

Ecosite Groupings Target

The targets shown in the table below are intended to provide a long term pattern of ecosite areas that emulates a natural disturbance regime. The landbase used for the calculation and maintenance of these target areas is the "total Crown forested" landbase.

The table contain the target ranges for the maintenance of forest ecosites (groupings) overtime, the current area for each ecosite, and the trend over 100 years. The range over 100 years and the trend are based on the natural disturbance scenario as represented in the Null alternative (without fire suppression), which is described later in this section.

Ecosite Area		Ecosite Groupings (ESG)									
		White & Red Pine	Pine & Oak	Jack Pine	Upland Spruce	Hardwood dominated Mixedwoods	Conifer dominated Mixedwoods	Mixed Hardwoods	Tolerant Hardwoods	Lowland Conifers	Lowland Mixedwoods
		ESG1	ESG2	ESG3	ESG4	ESG5	ESG6	ESG7	ESG8	ESG9	ESG10
Current Area (ha)		2,650	1,802	13,392	26,451	55,390	76,335	17,255	90,366	13,621	16,992
Target Range (ha) Over 100 yrs.	High	3050	2162	20420	44118	79829	98860	22806	110525	21418	18144
	Low	2046	1466	9218	11993	29761	53185	11671	82011	7411	13392
Trend over 100 yrs.		↓	↑	↑	↑	↓	↓	↓	↑	↑	↓

Disturbance Size Class Targets for Clearcut and Shelterwood (harvest cuts) Forest Units

The target is to have the harvest allocations designed for a range of harvest patch sizes that are based on studies of disturbance patterns in natural forests in the Algoma area. Given the current fragmentation of the Algoma forest and the general public attitude toward larger clear cuts, it is expected to take a relatively long period of time (60 + years) before the harvest patch sizes will actually emulate the historic natural disturbance size classes. To move the forest toward the target future forest condition a graduated approach will be implemented through the design of harvest allocations over successive five-year terms.

The following table shows the proportion (in percent) of disturbance that falls within each of the size classes for different time periods.

	% of Area by Disturbance Size Class (ha)					
Term of Disturbance	1-130	131-260	261-520	521-750	751-1000	1000+
Historic*	10	3	28	37	21	N/C**
1980-2000 (20yr. Actual)	89.4	6.4	3.0	1.3	0.0	0.0
1985-2005 (15yr. Actual + 5-yr. Allocation)	89.3	5.6	4.3	0.9	0.0	0.4
2000-2020 Target Forest	52	26	12	6	3	1

*Average of Past Fire Disturbance for Site Districts 4E and 5E (Based on data for patch sizes from 1 to 1000 ha.)
** No Historic data calculated.

The distribution of disturbance size across the management unit can be viewed in table AR-15 and section 4.1 of this report. There has been a move towards decreasing the % of disturbances in the 1-130 ha range on the management unit from 89% down to 84% by the end of the plan. This is the rate at which the distribution was expected to change over time to eventually meet the template distribution within a 60 year time horizon.

There was also a move towards the template targets for the 131-260 ha size classes as disturbances within this size range increased from 6% to 8 %. It was identified in the FMP that moving the disturbance sizes, especially the larger size classes would take time as a result of the public perception of clear cutting. There was a decrease in the % of disturbances in the 261-520 ha range, which will have to be accounted for in future plans through larger clearcuts to move the disturbance distributions on the forest towards the template targets.

Leave Patch Targets for Clearcut and Shelterwood Forest Units
Natural disturbances, such as fire, generally burn in an erratic pattern, leaving some groups of trees standing while completely destroying others. After most disturbances, patches of various sizes are dispersed across the landscape. Management of the Clearcut and Shelterwood Forest Units will attempt to emulate this pattern of leave patches.

For disturbances of different sizes, the proportion (in %) of the original stand(s) within each disturbance block that should remain behind in leave patches of various size classes is contained in this table.

Disturbance Size (ha)	% of Disturbance Area by Leave Patch Size*							Total
	Leave Patch Size (ha)							
	0-1.9	2-4.9	5-9.9	10-19.9	20-39.9	40-79.9	80+	
1-130	3							3
131-260	5	5	4					14
261-520	4	4	3	2	1			14
521-750	4	3	3	2	1	1		14
751+	2	1	2	1	3	1	4	14

*Emulates Natural Disturbance Pattern for Leave Patches

Tree Species Composition by Forest Unit Target
This target is based on the current forest condition for the 'total Crown forested' landbase. It provides the target average tree species composition for each forest unit as a desired future forest condition.

Clearcut Forest Units*

	Average Tree Species Composition (sum to 1.0)																
FU	Pw	Pr	Pj	Sb	Sw	Bf	Ce	La	He	Po	Bw	Mh	Ab	Ms	Qr	By	Total
PrCC	0.018	0.815	0.019		0.049					0.081	0.016	0.001					440
PwrST	0.226	0.012	0.004	0.024	0.091	0.117	0.045		0.004	0.056	0.263	0.054		0.067	0.005	0.033	13,880
PjCC	0.002		0.796	0.082	0.004	0.002				0.055	0.055			0.003			9,210
SbCC	0.011		0.016	0.794	0.010	0.047	0.031	0.042		0.012	0.035					0.001	18,083
PoCC	0.004		0.007	0.013	0.047	0.055	0.001			0.722	0.080	0.010		0.057		0.004	2,826
BwCC	0.026		0.008	0.022	0.031	0.056	0.006			0.052	0.728	0.018		0.052		0.001	4,908
MxC	0.049		0.066	0.250	0.077	0.206	0.091	0.014	0.001	0.035	0.136	0.007		0.024		0.043	43,945
MxdH1	0.047		0.019	0.028	0.054	0.125	0.042		0.001	0.152	0.369	0.044	0.001	0.081	0.001	0.034	49,672
MxdH2	0.055		0.015	0.034	0.050	0.110	0.040		0.002	0.112	0.413	0.040		0.099	0.006	0.024	33,682

Shelterwood Forest Units*

FU	Pw	Pr	Pj	Sb	Sw	Bf	Ce	La	He	Po	Bw	Mh	Ab	Ms	Qr	By	Total
PwrUS	0.451	0.064	0.013	0.009	0.061	0.091	0.011		0.001	0.047	0.170	0.011		0.053	0.009	0.009	11,031
HdUS	0.027			0.002	0.043	0.084	0.045		0.014	0.011	0.071	0.329	0.001	0.166	0.016	0.192	97,310
OcUS	0.042		0.001	0.059	0.036	0.095	0.482	0.021	0.003	0.011	0.125	0.015	0.002	0.030		0.079	29,286

All-aged Forest Units*

FU	Pw	Pr	Pj	Sb	Sw	Bf	Ce	La	He	Po	Bw	Mh	Ab	Ms	Qr	By	Total
HdSel	0.022			0.002	0.026	0.048	0.024		0.006	0.007	0.085	0.612		0.089	0.003	0.115	139,392

* the total column represent the area of total crown forest.

Cone Collection Targets

Seed Zones	Hectoliters of Cones by Tree Species				
	White Pine	Jack Pine	Black Spruce	White Spruce	Red Pine
23	15.8	24.5	3.2	1.3	
24		7.9	0.2	0.6	
26	7.2	1.6	0.6	1.1	

Cone collection activities on the Algoma Forest for the five-year term can be seen in table AR-8. Cones were collected for both the Algoma and Wawa Forests in conjunction with one another as a result of the two management units sharing seed zone 23 and the two units purchasing seedlings together. Cone collection levels for the Algoma Forest were higher than planned for the black spruce as a result of the Curtis seed orchard having a bumper crop in 2002. This seed is of particular value because it should produce a genetic gain in tree growth, which can be incorporated into future FMP modelling runs shortening rotation periods and increasing stand quality.

White pine cones were collected in 2004, but poor viability of seed is a major concern as the aging seed inventory becomes depleted. Clergue will have to continue to look for opportunities to collect white pine into the future to ensure there is enough viable seed in storage to cover the periods when white pine are not producing cones.

The seed inventory for jack pine and white spruce were well in excess of projected future demand throughout the term of the plan for the Algoma Forest. As a result, no cones were collected during the term of the plan. Clergue will continually aim to collect cones on an annual basis where bumper cone crops are encountered.

There was sufficient seed in storage for all species to supply what was considered a continuous supply of seed to produce the required number of seedlings for the 2005-2010 plan term. It was determined in 2005 that the aging seed had deteriorated for white spruce to the point where it could no longer be used by nurseries for seeding. This will result in a shift to planting more black spruce on the management unit in the short term until a viable batch of seed is collected for seed zones 21 & 23. There are opportunities to purchase seed from the Ontario Tree Seed Plant and adjacent SFLs with seed from the appropriate seed zones to cover the time period until seed is collected.

2. Maintenance of Ecological Processes and Forest Productivity

The management of the Algoma Forest aims to maintain ecological processes and forest productivity that is in accordance with the following objective.

Objective:

To ensure that ecological processes and forest productivity are minimally impacted by forest management practices.

Targets:

The above Maintenance of Ecological Processes and Forest Productivity strategies will be employed in a manner that will best achieve the following targets in the desired time period.

Crown Productive Forest

Crown Productive Forest		
Year 2000	Year 2010	Future Forest
383,792	385,198	392,597

Annual training schedule
Approximately five training courses will be scheduled annually to ensure that ecological processes and forest productivity are minimally impacted by forest management practices.
The courses will be detailed in the Annual Work Schedule. They will include, for example, training in health and safety, environmental compliance, and operational prescriptions.

Schedule for Area Inspections
The schedule for area inspections will be developed as a part of the Annual Work Schedule and will depend on three factors:
The previous performance of the contractor working in the area;
The size of the operation; and
The complexity of the forest operations prescription.

With the amalgamation of the Algoma and Wawa Forest's in 2005 it is difficult to accurately measure the changes to the Crown Productive Forest over the five year term of the plan. There have been no known changes to the productive forest land as a result of forest management activities. Any minor changes to the productive forest such as the establishment of gravel pits will be reversed once the desired aggregate material has been removed and the site rehabilitated to a condition that satisfies OMNR.

Training sessions were incorporated with the annual health and safety meeting. These meetings were provided to all individuals performing forestry work on the Algoma Forest. Some of the topics presented at the health and safety forum included:
Gasoline Handling
FERIC Research Projects
The use of chokers and cables
Machine Lubricants
Moose Watch
Use of Spill Kits
Forest Certification
Working around helicopters
Labour Laws
Electrical Awareness
Stream Classifications
Standard Operating Procedures – Minimizing Site Damage
Fire Suppression Requirements
Forest Compliance Summary

The health and safety forum has proven to be an effective venue to present the above mentioned information to a large audience in an efficient manner. The forum is run annually and will continue to be used as a method of getting information to the people that need to be informed the most.

Forest compliance inspections are performed regularly on the Algoma Forest in accordance with the agreed upon schedule in each annual work schedule. Generally reports were completed monthly to ensure operations were taking place in accordance with the FMP. As a result of the implementation of Provincial Compliance Inspector program all field staff for Clergue and partner companies have been trained and certified to perform compliance audits and reports through the Forest Operations Inspection Program.

3. Forest Cover

The management of the Algoma Forest aims to achieve a forest cover that is in accordance with the following objective.

Objective:

To maintain, at a variety of scales and over successive planning periods, the range of *Wildlife Habitats* that are required to support wildlife species on the Algoma Forest.

Targets:

Targets to address the habitat for 15 regional wildlife species

The targets shown in the table below are intended to provide a long term habitat supply of *preferred habitat* for the15 wildlife species identified for the Great Lakes St. Lawrence Forest region [found in Naylor et. al. (1998)[17]]. These 16 species are: moose, white tailed deer, black bear, American marten, snow shoe hare, northern flying squirrel, broad winged hawk, barred owl, ruffed grouse, pileated woodpecker, least flycatcher, ruby crowned kinglet, blackburnian warbler, white throated sparrow and red backed salamander; Red Shoulder Hawk.

Null Scenario Wildlife Species (no fire suppression and no management)

Wildlife Species	Preferred Habitat		
	Current Area (hectares)	Target Range Over 100 Years (1000 ha)	Trends in Habitat over 100 years
Moose-Foraging	2653	2.7 to 5.9	Increase
Moose-Wintering	58645	58.6 to 74.8	Increase
Deer-Foraging	9629	9.6 to 13.0	Increase
Deer-Wintering	63060	63.1 to 67.9	Increase
Black Bear-Foraging	15942	15.9 to 25.2	Increase
Black Bear-Wintering	4222	4.2 to 4.7	Increase
Marten	81186	81.2 to 117.1	Increase
Snow shoe Hare	20371	18.0 to 51.6	Increase
Flying Squirrel	57547	56.1 to 75.2	Decrease
Broad winged Hawk	355364	326.1 to 355.4	Decrease
Barred Owl	183255	183.3 to 218.1	Increase
Ruffed Grouse	28480	8.5 to 28.5	Decrease
Pileated Woodpecker	113173	113.2 to 166.3	Increase
Least Flycatcher	266113	258.3 to 266.1	Decrease
Ruby-Crowned Kinglet	29600	23.1 to 29.6	Decrease
Blackburnian Warbler	82311	82.3 to 120.2	Increase
White Throated Sparrow	11443	5.5 to 20.5	Increase
Redback Salamander	268966	269.0 to 327.1	Increase
Red Shouldered Hawk	12658	12.7 to 14.8	Increase

* "F"= Foraging habitat area and "W"= Winter habitat area

Tracking changes to wildlife habitat from the beginning of the plan to the end of the plan term is difficult due to the amalgamation of the Algoma and Wawa Forest's and the 2005-2025 FMP incorporating the entire landbase for wildlife habitat. Since the activities that took place during the 2000-2020 were in accordance with the approved forest management plan it is assumed at this time that wildlife habitat is in line with the projections and targets set during the development of the plan. There have been no known significant changes to the landscape

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[17] Naylor, B. et. al. OMNR. DRAFT June 16, 1998. Assessing Landscape Diversity and Wildlife Habitat Supply in the Great Lakes – Lawrence/Transition Forest of Central Ontario. 15pp. (a.k.a. "13 pages of light")

during the term of the plan and no natural disturbances that may have altered the balance of habitat that existed at the start of the plan.

In addition to the amalgamation of the two forests during the development of the 2005-2025 FMP it is not possible to accurately track changes to wildlife habitat on the Algoma Forest due to the impacts of updates to the habitat suitability matrix in SFMM. Any changes that were made to the matrix through improved knowledge of the above fifteen selected species were not communicated with Clergue. An accurate portrayal of landscape changes cannot be reported as a result of not knowing or understand what, if any, changes were made to the matrix. In the future it would be beneficial for OMNR to provide planning teams with a summary of the changes made to the habitat matrix in SFMM since the development of the previous plan to give the planning team the opportunity to understands the impacts of those changes at the landscape level.

4. Water Quality and Fish Habitat
The management of the Algoma Forest aims to protect water quality and fish habitat in accordance with the following objective.

Objective:
To protect water quality and fish habitat so that they are not diminished as a result of forest management practices.

Targets:
The above Water Quality and Fish Habitat strategies will be employed in a manner that will best achieve the following targets in the desired time period.
Annual training schedule
Approximately five training courses will be scheduled annually to ensure that water quality and fish habitat are minimally impacted by forest management practices. The courses will be detailed in the Annual Work Schedule. They will include, for example, training in health and safety, environmental compliance, and operational prescriptions.

Area inspection schedule
The schedule for area inspections will be developed as a part of the Annual Work Schedule and will depend on three factors:
The previous performance of the contractor working in the area;
The size of the operation; and
The complexity of the forest operations prescription.

Training activities related to Water Quality and Fish Habitat are the same as those mentioned above for maintaining ecological processes and forest productivity. Clergue undertook a major project to upgrade water crossings on the Whitman Dam and Ranger North roads during the plan. These new water crossings were installed using a dependable work force and upgraded crossings to meet current design standards. Many of the new crossings take full advantage of the natural stream conditions through the use of arch culverts and bridges.

There has been no known impact on water quality and fish habitat as a result of forest management activities on the Algoma Forest during the plan term. All water crossing locations and road construction within an AOC were approved by OMNR through a PCOW prior to installation. Protective streamside buffers were established around all streams and water bodies in accordance with the AOC prescription developed for the FMP to protect and maintain the integrity of the value.

B. COMMUNITY AND RESOURCE USE SUSTAINABILITY

1. Timber Supply
The management of the Algoma Forest aims to achieve a timber supply that is in accordance with the following objective.

Objectives:
To provide a continuous, predictable, and sustainable supply of timber for the St. Marys Paper and Agawa Forest Products mills in Sault Ste. Marie, the Midway Lumber mill in Thessalon and the E.B. Eddy Specialty Papers mill in Espanola. The Algoma Forest will contribute a portion of the overall timber supply requirements of these mills; and

To provide a supply of timber for personal use
To provide a supply of timber to traditional fuelwood operators.

Targets:
The above Timber Supply strategies will be employed in a manner that will best achieve the following targets in the desired time period.

Wood Supply Targets

These targets are based on a timber supply agreement and the current (1995 - 2015) forest management plan commitments. The target is to supply the MU dependent mills with the specified species, products and volume indicated in the table below; it is realized that the selected management alternative may not be capable of supplying the targets as stated.

Mills	5 Year Target Volume by Species (m^3 x 1000)								
	Pw	Pr	Pj	Sb	Bf	Ce	Bw	Po	THd
St. Marys Paper mill in Sault Ste. Marie			287.5m^3 (57.5m^3/yr) pulpwood supply agreement					93m^3 (18.6m^3/yr) pulpwood supply agreement	
Agawa Forest Products mill in Sault Ste. Marie	25.0m^3 (5.0m^3/yr) sawlogs						22.5m^3 (4.5m^3/yr) sawlogs & veneer		130.0m^3 (26.0m^3/yr) sawlogs & veneer
Midway Lumber mill in Thessalon	4.4m^3 (0.81m^3/yr) sawlogs		8.7m^3 (1.7m^3/yr) sawlogs				2.6m^3 (0.5m^3/yr) logs		14.3m^3 (2.9m^3/yr) sawlogs
E.B. Eddy Specialty Papers mill in Espanola									470.0m^3 (94.0m^3/yr) tolerant hardwood pulpwood conditional commitment

As per the Timber Supply Agreement for the Algoma and Wawa Management Units the total annual commitment of jack pine, spruce, and balsam pulpwood to St. Marys Paper is 107,000m3. The Algoma Management Unit will contribute 35,000 m3 annually of the total commitment. The 35,000 m3 annually is based on a supply provision, which has 2/3 of the supply coming from the Wawa Forest and 1/3 supplied from the Algoma Forest

St. Marys Paper received an average of 34,000 m3 annually of SPF & poplar form the Algoma Forest. This is in line with the projections and targets set for the Algoma Forest.

The pulp mill in Espanola received 93,300 m3 annually of maple and birch. Some of the wood committed to the Espanola Mill was released and sold on the open market. The level of maple delivered was below target, but the additional harvesting of both yellow birch and white birch helped to make up the difference due to the maple shortfall. The demand for hardwood pulpwood increased significantly during the term of the plan as available fibre became more constrained and the powerful American dollar made shipping pulpwood from private land across the border more attractive.

The Agawa Forest Products Mill in Sault Ste Marie changed ownership to Domtar during the 1995-2000 plan term and was subsequently sold to A private owner and became Boniferro Mill Works in 2003. This mill received 36,800 m3 annually of hardwood logs. Changes to the mill near the end of the term, including the addition of a scragg saw to process lower quality logs has increased the amount of fibre processed at the mill. The hardwood log market was relatively strong and stable during the term of the plan.

Midway Lumber Mills only received 33% of their target delivered volume for the Algoma Forest during the term of the plan. This is largely due to the mill's product specifications and the reduced availability of high quality logs in the short term. The harvesting in the white pine forest units was below the target, which also played a role in Midway not receiving the entire commitment form the Algoma Forest. A total of 9,400 m3 of logs were available to Midway from the Wawa Forest, which is also managed by Clergue.

One overlapping license was managed as a traditional fuelwood operation. This license was co-supervised by Clergue and OMNR staff. In addition to the overlapping license OMNR provided fuelwood permits for collecting wood from landings that had been released after the completion of harvesting activities.

Intensive silviculture – 2,297 hectares of plantations.

The area artificially regenerated "plantation" on the Algoma Forest was 1,198 hectares. This represents 93 % of the area harvested under the clearcut system. The remaining areas left for natural regeneration were poplar or white birch dominated and located in isolated patches adjacent to stands managed under either the selection or shelterwood system. The artificial regeneration of these sites will reduce time to free-to-grow and ensure stands meet regeneration targets set in the silvicultural ground rules.

The forecast 2,297 hectares if plantation establishment was developed based on harvesting 100% of the available harvest area, which did not happen. The level of intensive plantation establishment was significantly above the targeted 50% level set for the clearcut forest units. This should result in increased harvesting levels in the future to account for the allowable cut effect of planting more area than originally planned.

Operational Surveys Targets

The forest units listed in the following table have a history of partial harvesting activities and therefore require operational surveys to determine volume and yield information and stand structure information in order to confirm appropriate forest operations prescriptions.

This table shows the hectares by forest unit that have been targeted for operational surveys for the time periods indicated.

Forest Unit	Area to be sampled in hectares
HdUS - Tolerant Hardwood Shelterwood	3,271
HdSel - Selection	21,184
MxdH1 - Mixed Hardwood (one)	387
MxdH2 - Mixed Hardwood (two)	177
MxC - Mixed Conifer	280
SbCC - Black Spruce	163

The use of certified tree markers in the HdUS and HdSel forest units ensure that the appropriate silvicultural treatment is being applied to all marked stands. Generally FOP changes were made to manage stands under the uniform shelterwood system as a result of poor quality stems making the stand unsuitable for management under the selection system at this time. The assignment of silvicultural systems to stands was done at the start of the plan based on forest unit and not the stand structure. This types of FOP change is expected to continue until the FRI is updated with the stand structure encountered.

Stands in the mixed hardwood forest units were cruised during the first two years of the plan to determine stand volumes and FOP alternatives. Clergue made a strong effort to identify stands that met the criteria for OFA Item #11 Opportunity #1 low volume salvage. None of the stands that were determined to meet the criteria for low volume salvage were actually operated in during the term due to the limited cutting horsepower on the unit and the lack of an established market for poor quality white birch from remote locations on the Algoma Forest.

Access Road Targets

The access road targets are shown in the following table for construction and maintenance of both primary and secondary road classes.

	Primary (km)		Secondary (km)	
	New	Reconstruction	New	Reconstruction
Construction		2.6	15.6	99.1
Maintenance	374.4		223.4	

A total of 10.6 km of primary road and 44.5 km of secondary road were constructed/re-constructed during the term of the plan. There was more primary road construction than originally planned as a result of operational decisions to improve road conditions and reduce haul distances. These changes were made through amendments to the 2000-2020 FRM. The following is a description of the new construction performed during the term of the plan on primary roads:

The realignment of the Carpenter Lake Road will provide for safer conditions for both log truck drivers and recreational users.

The Mekatina road was constructed as planned.

The Powerline Road was upgraded to a primary road in 2004 as a result of the installation of a new bridge crossing the Batchewana River connecting the Algoma Forest to the Superior Forest. This connection will provide an increased opportunity for wood to flow from the north end of the Algoma Forest to Chapleau and other Northern destinations.

Maintenance work was performed on an ongoing basis as roads were used for forest management activities. Maintenance work was not reported for the number of km maintained in a given year, but rather as a yes/no indicator at the annual report stage.

2. Integrated Resource Management

The management of the Algoma Forest aims to achieve integrated resource management that is in accordance with the following objective.

Objective:
To contribute to employment stability and to promote economic growth based on resource use within the overall context of forest sustainability, and

To maintain a suitable environment for:
Resource Based Tourism and promote resource use decisions that supports the interests of resource based tourism operators;

Other Commercial Activities - such as trapping and mineral exploration;
Resource Based Recreation - both road based and remote recreational activities.

Targets:
The above Integrated Resource Management strategies will be employed in a manner that will best achieve the following targets in the desired time period.
One annual meeting with each of the user groups to discuss any benefits or conflicts that may result from the plan implementation.
Prepare road use management strategies, plan the timing of operations, employ stand selection criteria and forest renewal prescriptions that minimize the impact on tourism and recreational activities.
Implement a compliance program that monitors the application of forest practices within areas of concern and the use of reserves which have been established to address tourism/recreational values.
Include trapper's cabins and trapper's trails on Values Maps and prepare AOC prescriptions that create buffers around their cabins and minimizes any potential damage to their trails;
Use the appropriate guidelines to select stands for harvest and prepare prescriptions that benefit the habitat of commercially important species.

Clergue has worked closely with resource based tourism operators during the preparation of the 2005-2025 FMP in order to complete Resource Stewardship Agreements (RSA). This has entailed discussions with 4 tourist operators with the signing of 2 RSAs. These agreements have set the stage for a clear understanding of tourist operator interests and the approach to dealing with these interests. When forestry operations are scheduled within areas of interest, specific meetings are held with the interest groups that may be affected.

Road use management strategies have been developed as an integral part of the forest management plan for the Algoma Forest for the term 2005-2010. These strategies address specific land use/resource management issues that were raised during the preparation of the forest management plan.

The Company compliance/monitoring program documents activities that may have taken place within Areas of Concern.

Clergue plays an active role in communicating with the Local Citizens Committee and providing technical/professional support for their decision making processes. Individual members keep their respective groups appraised of current forest management activities.

Local resource users are encouraged to meet with Clergue and partner company staff during the development of each annual work schedule to ensure that they are aware of upcoming forest management activities within their geographic range. Partner companies have worked closely with groups like the local snowmobile club to ensure that the impacts of forest management activities are minimal to their use of the local trail system.

Partner company staff have kept trappers informed of where and when operations will be taking place within their trap line and identifying sites where nuisance beavers could potentially destroy a main access road.

Activities such as aerial herbicide application and slash pile burning go through a significant amount of public review prior to the implementation. Clergue has worked with local tourism outfitters to minimize the impacts of these silvicultural treatments on their activities by working together to determine an appropriate start date and communicating on a regular basis while the projects are ongoing.

Buffers has been applied to all trapper cabins encountered during forest management activities to protect the adjacent forest cover and maintain the aesthetic appeal of the intact forest around each cabin. The location of each trapper's cabin that is encountered is marked using GPS and the coordinates are sent to the OMNR to update the NRVIS database. Timely updates to the NRVIS database are critical to the mapping and protection of known values.

3. Cultural Heritage Values

The management of the Algoma Forest aims to protect cultural heritage values in accordance with the following objective.

Objective:
To identify and protect cultural heritage values that may be affected by forest management operations.

Targets:
The plan Cultural Heritage Values strategies will be employed in a manner that will best achieve the following targets in the desired time period.
Design and implement a compliance program that monitors forest management operations to ensure that cultural heritage values are protected in accordance with the cultural heritage guidelines. An example is the monitoring of forest practices within areas of concern and the use of reserves that have been established to protect known and potential cultural heritage values.
Document any new known cultural heritage values or any potential cultural heritage sites.
Have an archeologist assess designated high potential cultural heritage sites that may be impacted by forest management activities.

AOC prescriptions were developed for the protection of both known and high potential cultural heritage values on the Algoma Forest. Some sites that were identified as high potential were checked by an archaeologist and withdrawn prior to any forest management activities taking place.

No new cultural heritage sites were identified during the term.

4. First Nations

The management of the Algoma Forest aims for a relationship with First Nations that is in accordance with the following objective.

Objective:
To provide forest-based employment and economic-benefit opportunities to local aboriginal communities.

Targets:
The above First Nations strategies will be employed in a manner that will best achieve the following targets in the desired time period.
Initiate discussions to look for opportunities for native employment with partner companies operating on the management unit.
Provide the opportunity for Native communities on the management unit to participate in the planning process through the optional Forest Management Native Consultation Program.
Encourage Native communities to look for employment opportunities in forest renewal and other forest management activities.

Clergue has three first nation communities within its boundaries; Garden River First Nation, Batchewana First Nation and Michipicoten First Nation. Clergue has actively dialogued with Garden River First Nation through the Garden River Forestry Association and directly with Chief Buckell in Michipicoten. Clergue and the MNR have worked closely with First Nations during the preparation of the Algoma Forest Management Plan. This has included preparing a Native Background Report and a Native Values Map. Clergue has initiated discussions for harvesting operations with Garden River and Michipocoten.

One harvest allocation located along the northern boundary of the Garden River First Nation Reserve land was set aside for harvest by the members of the First Nation. Although discussions were ongoing throughout the term of the plan no operations took place.

5. Silviculture

The management of the Algoma Forest aims to apply silviculture in accordance with the following objective.

Objective:
To design and implement silvicultural operations that manipulate forest cover in a manner that achieves the range of targets for the Algoma Forest and contributes to the achievement of the desired future forest condition.

Targets:
The Silviculture strategies will be employed in a manner that will best achieve the following targets in the desired time period.
Forecast of Renewal and Tending - As per table FMP-25

A silvicultural program will be implemented that will move the current forest unit distribution towards one that is representative of the historical distribution (Null alternative – forest unit distribution at 100 years) on the Forest and reflects anticipated economic requirements. This historical distribution is based on an analysis of the best local information that is available.

The forest renewal effort will be based on a combination of natural and artificial regeneration techniques using species and seed sources well adapted to the site conditions on which they will be used. While artificial regeneration methods may be more dependable, they might not emulate entirely the structural characteristics nor adequately conserve the genetic heritage of the Forest. The use of natural regeneration measures may do so more effectively.

Prescribed burning is recognized as an important part of ecosystem based management and of the forest renewal options on the Forest. CFMI will explore the use of prescribed burns and target to complete one burn over the operating term. Slash pile burning is a standard operational procedure on full tree logging operations in conifer forests.

The silvicultural program implemented on the Algoma Forest was in line with harvesting activities. The level of intensive silviculture was above that projected at the beginning of the plan term as a result of funding from the Forestry Futures Trust Fund for crop tree release work.

Clergue and partner company staff are continually working to implement strategies that will move the forest unit distribution towards the perceived historic condition. It must be recognized that the establishment and survival of white pine on the landbase is difficult without the traditional low intensity fires that once burned across the local landscape. There has been an increased use of scarification to encourage natural seeding and take advantage of local seed sources and to maintain the genetic diversity across the landscape.

Prescribed burning is recognized as a valuable silvicultural tool that has not been used on the Algoma Forest due to several factors including the high level of planning required, the uncertainty of weather conditions and the lack of qualified staff to implement prescribed burns. Unless the OMNR assumes full operational and liability responsibility for the development and application of prescribed burns it is unlikely that this tool will be feasible on the Algoma Forest. Clergue remains committed to working with OMNR fire staff to increase the use of fire on the landscape, while recognizing that we all have a role in managing the Crown forest.

For the most part planned renewal and tending activities were undertaken during the term of the plan. Any deviations from the planned levels have been discussed earlier and are not expected to have a significant impact on achieving the planned objectives or jeopardizing the desired future forest condition.

The preferred silvicultural ground rule and associated silviculture treatment package is generally the activities used to grow the forest towards the desired future forest condition. Clergue did not monitor minor changes to silviculture treatment packages as all renewal activities performed on the management unit due to the fact that *this would lead to fragmented reporting of activities that have little to no impact in sustainability. All silviculture activities were completed with approval from OMNR and were implemented to ensure that the health of the forest was the number one priority. It is entirely possible that when dealing with sometimes 50 silviculture treatment packages for a single forest unit that the preferred is applied less than 10 % of the time. Tracking silviculture treatment packages would require an excessive amount of energy to report and would never be used by anyone for anything. With GIS and coverage submission OMNR can view treatments applied annually and track any changes at the end of each year.*

The determination of how the forest grew in relation to forecast levels will depend on stand conditions at the time of free-to-grow. Clergue applied renewal and tending treatments to direct regenerate the forest according to forecasts. The predictions of natural disturbances were realistic and will not have an impact on the growth and development of the forest.

The forecasts found in Table FMP-25 were developed based on harvesting 100% of the available harvest area during the term of the plan. Since this did not happen it was not possible to reach the forecast levels of renewal and maintenance on the management unit. There was no significant increase in seedling mortality as a result of the site preparation performed. Tending levels released both planted and natural conifer from undesirable hardwood competition to maintain the health of the forest. Recent science has shown a significant increase in growth rates as a result of early tending that is expected to carry forward through the life of a stand. The amount of tending performed may reduce rotation periods for conifer stands in the future as a result trees growing relatively free from competition.

9.2 THE 2000-2005 WAWA FMP

1. Forest Diversity
This reflects the broad goal of forest management in achieving a healthy and sustainable forest ecosystem at the management unit level and is guided by the Policy Framework for Sustainable Forests (MNR, 1994).

Objective
To ensure that timber management activities closely mimic natural disturbance regimes in order to maintain ecosystems and biological diversity within the bounds of natural variation.
To meet the overall forest diversity objective, sub-objectives have been established:

1.1 Characteristics of Operating Blocks in Relation to Natural Disturbance
Objectives
To attempt to emulate natural disturbance patterns in the Wawa Forest, that reflect the diversity of the Boreal, Great Lakes-St. Lawrence and Transitional portions, by designing harvest patterns and block development.

To attempt to emulate natural disturbance patterns in the coastal portion of the Wawa Forest, that appears to exhibit a variety of disturbance patterns and events.

The patterns of harvest should replace those of natural mortality at the stand and landscape level. These harvest patterns should also assist in maintaining biological diversity by mimicking the natural disturbance pattern that various organisms have come to depend upon.
To achieve this objective, specific targets and strategies were developed for the management unit, based on a target template developed by the Ontario Forest Research Institute (OFRI). Templates have been created as per geo-reference to Hill's site regions.
The Boreal forest portion of the management unit displays typical boreal forest characteristics where fire seems to be the dominant disturbance factor. The south and southwest part of the management unit is dominated by Great Lakes-St. Lawrence forest types. Single tree and small patch replacement is probably the main disturbance regime, but there have been larger fires here than in the Northeast Boreal area in this century. For the Wawa Forest, site regions 3E and 4E have been blended together to accurately represent the Great Lakes-St. Lawrence forest and Boreal forest influences on the management unit.

Targets

The target template is used in comparing the proposed operations ability to follow and emulate natural disturbance patterns on the Wawa Forest. The blended template is given below (Figure 5). Current and future forest disturbance patterns are compared to the template as part of the second test of sustainability in Section 2.3.4.4.3.

Figure 5 - Natural Disturbance Pattern Applicable to Wawa Forest (Source: OFRI)

Disturbance Patch Size Class (Ha.)	Number of Patches	Area by Class Size (Ha.)	Number of patches per year / size class	% Disturbance Frequency	Area disturbed by patch per year / size class	% Disturbance Area
0-10	0	0.0	0.0	0.0	0.0	0.0
>10-130	159	5,901.0	8.8	48.5	327.8	3.0
>130-260	27	5,197.0	1.5	8.2	288.7	2.6
>260-520	78	29,313.0	2.6	14.3	977.1	8.9
>520-1040	82	58,941.0	2.7	15.0	1,964.7	17.9
>1040-2500	42	69,303.0	1.4	7.5	2,310.1	21.1
>2500-5000	24	79,486.0	0.8	4.4	2,649.5	24.2
>5000-50000	10	72,942.0	0.3	1.8	2,431.4	22.2
	TOTAL	321,083.0	18.2		10,949.4	

Coastal Disturbance Patterns (Additional Target)

Specific operational trial prescriptions are identified for the Mishibishu harvest block in the Coastal zone, in an attempt to mimic the complex disturbance pattern in this area. Currently available evidence suggests that natural disturbance mechanisms in this portion of the Wawa Forest may not historically been driven by large-scale wildfire disturbance. Therefore, the harvest pattern on portions of this area should attempt to emulate partial stand disturbances caused by weather and disease.

Landscape analysis conducted in the plan will provide further distinction of the disturbance regimes between forest types, by splitting the management unit into three zones; Lake Superior Boreal, Northeast Boreal and Great Lakes-St. Lawrence ecological zones to reflect the differences in primary disturbance mechanisms between these forest types. The locally-recognized boundaries for these three ecological zones are illustrated on Map 3, located within the plan.

Separation of the Forest into three ecological zones was confined to the landscape analysis exercises, and was not incorporated in the SFMM modeling due to the lack of accurate and distinctive information for many of the input parameters, such as natural succession pathways and rates of natural disturbance. This lack of information has been identified as a data gap requirement in Section 2.6.2.3, Information on Other Resources.

Allocations were distributed and across the management unit to best emulate natural disturbances, while trying to incorporate the selected management alternative and meet wood supply and wildlife habitat requirements. White pine dominated stands were managed under the shelterwood system to be emulate low intensity fires that would have been expected to periodically burn through these stands. Clearcut forest unit boundaries were established to follow the natural delineated stand boundary where possible. Residual trees were retained to provide some forest cover and downed woody debris for wildlife habitat requirements.

1.2 Characteristics of Residual in Relation to Natural Disturbance

Objective

Attempt to emulate natural disturbance patterns found in the three ecological zones of the management unit, through residual design.

Stand Replacing Disturbances

The rationale for setting residual targets for stand replacing disturbances is based on analysis of 42 fires from across northern Ontario by OFRI, with additional considerations for local climate. As described above, clearcuting is used to emulate the pattern of moderate or intense fires. The pattern within stand replacing disturbances caused by weather or disease is not known but would likely leave remnants of the original stands as well.

Targets

Amount of Residual - The area of residual patches should average 25% over all disturbance events and generally range from 15 % to 40 % for individual disturbance events.

Size of Residual Patches - The total residual area in each disturbance event should be divided generally equally (+/- 25%) among logarithmic size classes (1, 10, 100, 1000 ha).

Distribution of Residual - Generally, the residual should be concentrated near the edge of the disturbance event. The area in peninsular residual patches should outweigh the area in internal residual patches by 2:1 to 5:1. Preferred distribution patterns reflect the OFRI findings on residual in natural fire events.

Shape of Residual - On average, patches should be about twice as long as wide, to reflect the burn pattern created by prevailing winds.

Species composition of residual should reflect the differences in broad forest types found in natural residual and account for differences in resistance of certain species to burning.

Upland conifer and mixed-wood should be less represented in the residual than in the undisturbed forest.

Lowland conifer and upland hardwoods should be more represented in the residual than in the undisturbed forest.

Gap Replacing Disturbances

These targets apply to stands where the primary disturbance pattern is not stand replacing fire or catastrophic weather events. Rather, the dominant pattern is small gaps caused by weather or disease. This pattern may be common in the Lake Superior Boreal area in the west part of the management unit and in the Great Lakes-St. Lawrence types in the south and southeast part of the management unit.

Targets

Species Composition of Residual - Should be representative (+/- 25 %) of the original stand until more information on gap disturbance patterns is available. Weather may affect all species, low intensity fire may affect some more than others, and disease may remove only one species.

Age of Residual - Use selection or shelterwood removal on both mature and old trees of all species. Leave all advanced growth. Weather and disease tends to affect older trees but would also leave some. A mix of old growth and merchantable trees should be retained for return cuts and to maintain structural diversity of forest habitat.

Height of Residual – Should be representative (+/- 25%) of the original stand, however emphasis will be placed on retaining a composition of white pine and white spruce supercanopy trees.

All Disturbances

To mimic stand structure and productivity in a disturbed area, 6 to 12 standing snag trees per hectare (with a diameter of at least > 25 cm dbh) will be retained. Of these, there should be at least 1 per ha > 40 cm dbh. These should be well distributed and generally representative of the stand composition.

Patches of standing dead or dying trees and all trees with existing cavities or heart rot should be retained as habitat., where possible.

Roads - Minimize roads to minimize permanent edges (see Forest Productivity).

Plan at least one prescribed burn. Allow burning in residual patches and reserves where acceptable.

There was a noticeable increased acceptance of retaining 6-12 wildlife trees per hectare during the term of the plan. Operators and Clergue staff worked quite hard at developing strategies to ensure that the required number of residual snag trees was retained. The composition of the residual species was based on the stand composition and the size distribution of stems with the stand. At least 50% of the white pine encountered were retained for their value to wildlife, genetic diversity, and as supercanopy trees to emulate natural disturbances.

Predictions on natural depletions were accurate for the plan. There were no major natural stand replacing disturbances as a result of fire, wind, or insects.

Road construction was minimized in all blocks in order to minimize permanent edges, maintain forest productivity, and minimize operating costs. Where possible, roads were regenerated at the time of tree planting. Generally, winter roads and roads made of fine sand capable of supporting jack pine were planted.

There were no prescribed burns during the term of the plan due to the lack of commitment from both the OMNR and Clergue to complete the required planning and site selection. The cost and liability requirements of performing prescribed burns is well beyond what the forest industry is capable of accepting at this time. Clergue will continue to work with OMNR in an attempt to complete prescribed burns in the future, but the OMNR must be willing to undertake the planning, liability, and implementation responsibilities of the burn.

1.3 Forest Species Composition

Objective
Achieve a forest species composition similar to what would occur with the natural disturbance regime in this part of Ontario. To maintain the genetic diversity of tree species.

Targets
Increase the area of the white pine forest unit over current levels by the end of the 20-year term of the plan. Increase the white pine component in other forest units by developing guidelines for leaving white pine trees in this plan.

Maintain or increase the relative proportion of yellow birch and white spruce at the stand level compared to present levels until a natural benchmark is determined.

Maintain or increase rare species on the unit (red pine, black ash, white elm) at the stand level until a natural benchmark is determined.

For each planning term, and within the managed Crown forest available for timber production, excluding the barren and scattered areas, maintain the area of each of the remaining forest units within +/- 20 % of the bounds of natural variation (based on modeling 100 years into the future) until a refined natural benchmark is determined. (see Figure 6 for a description of the current area for each forest unit and the desired limits imposed by this target).

Figure 6 - Forest Unit Trends Targets

Forest Unit	Forest Unit Name	Current Area (ha)	Target Area (+/- 20% of natural benchmark, ha)
BFall	Balsam fir	7,165	14,443 - 5,732
BWgl	Great Lake-St. Lawrence White Birch	22,912	28,120 - 11,458
BWhrd	White Birch-Hardwood	38,731	53,814 - 30,985
BWsft	White Birch-Softwood Mix	51,587	61,904 - 22,382
BYus	Yellow Birch-Uniform Shelterwood	16,466	19,759 - 9,190
HDus	Hardowood-Uniform Shelterwood	15,802	24,564 - 12,642
MHsel	Maple Selection	14,759	17,711 - 11,807
OCall	Other Conifer	5,769	7,064 - 4,615
PJhrd	Jack pine-hardwood mix	2,671	9,349 - 2,137
PJsft	Jack pine-softwood	8,797	13,660 - 7,027
POhrd	Poplar-hardwood	11,200	22,408 - 8,960
POsft	Poplar-softwood mix	6,517	21,383 - 5,214
SPhrd	Spruce-hardwood mix	10,693	42,115 - 8,554
SPlo	Spruce lowland	19,005	24,865 - 15,204
SPsft	Spruce softwood	31,843	38,212 - 18,627

* Note: Specific target for PWRus forest unit is identified previously in this section.

Where incidental white pine was encountered in non PWRus forest units harvesting contractors were instructed to retain at least 50% of the pre-harvest level. This tree retention application was applied to maintain the genetic diversity of isolated white pine populations and provide a source of seed for the natural regeneration of white pine.

Clergue also implemented mixed planting of white pine in conjunction with other conifer species to increase the presence of white pine on the Wawa Forest in areas where it has the most likely chance of survival. Generally white pine was mixed planted on hill tops away from the treed edge where ribies is most prevalent. Mixed planting was applied up to 40% depending on the site conditions and suitability for white pine growth and survival. White pine seedlings were also planted in stands where there was a minor white pine component prior to harvest to further increase the amount of white pine on those sites. A total of 344,000 white pine seedlings were planted on the Wawa Forest during the term of the plan. This should be incorporated into the FRI at a later date when the stands are deemed free-to-grow.

No natural benchmarks were established for the management unit during the term of the plan. Clergue is in the process of developing a pre-industrial forest report that will outline what those historic benchmarks should be. The relevance of those figures in sustainable forest management and setting benchmarks will need to be questioned in the future as we proceed through a time of perpetual environmental and climatic change.

The area within forest units has not deviated outside the ± 20% target set during the development of the plan. This variation will continue to be monitored within successive FMPs and controlled through sustainable forest modeling, which will provide the checks and balances on a continual basis to ensure that the forest is managed within the agreed upon bounds of sustainability.

Most of the Wawa Forest has seen past human intervention, whether it be through harvesting or fire suppression, which has lead to the current forest condition. Until an accurate historic forest condition is determined there is no way to assess changes to the Wawa Forest at the stand or site level.

Table RPFO-13 shows the shifts that occurred from the beginning to end of the plan for each forest unit age class combination. The PoHrd forest unit decreased in overall presence during the plan, but is expected to rebound in the future as stands with 30 % poplar are regenerated naturally to poplar dominated stands. This short term dip *in the PoHrd forest unit will not have any significant impact at the landscape level as SFMM modelling and planned future silviculture activities help to move the forest towards the desired future condition.*

There was no decrease in the PwrUS forest unit as expected due to the increased level of planting on the management unit and more pine being captured in free-to-grow surveys. White pine renewal work is done on the Wawa Forest more for ecological purposes as opposed to wood supply reasons. There is little to no interest in white pine from the Wawa Forest and as more mills begin to close as a result of poor market conditions it is expected that there will be even lees demand for white pine in the future. The elimination of low intensity natural fires on the landscape has also reduced the quality and abundance of suitable site conditions for the regeneration and development of white pine.

1.4 Forest Age Structure

Objective

The overall age structure objective is to manage all forest units close to their natural age structures by maintaining a range of ages in the mature and overmature classes.
Maintaining mature and old components in the forest, ensures that the physical structure and special habitat characteristics such as cavity trees, downed woody debris and snags are present to support different assemblages of wildlife.

Age structure objectives, strategies and targets were identified for both the Boreal and Great Lakes-St. Lawrence forest types.

1.4.1 Boreal Forest

Objective

To achieve a distribution of stand ages similar to a wildfire driven boreal ecosystem.

Targets

Maintain an age class structure for each forest unit that maintains the portion of the forest in mature and overmature age groups within +/- 20% of the bounds of natural variation (based on modeling 100 years into the future). [*Target percentages are shown in Figure 7, with current conditions also shown for comparative purposes.*]

Figure 7 – Old growth targets for clearcut forest units

Forest Unit	Old Growth Age Groups		% of Forest Unit Area in Old Growth Age Class by Time Period			
			Mature + old		Old only	
	Mature + old age groups	Old age groups	Current Forest Condition	Desired Future Forest at Year 2100 (+/- 20% of natural benchmark)	Current Forest Condition	Desired Future Forest at Year 2100 (+/- 20% of natural benchmark)
			%	%	%	%
BfAll	81+	101+	9.3%	17.0-25.6	0.3%	1.6-2.4
BwGL	81+	121+	41.6%	17.9-26.9	3.8%	7.2-10.8
BwHrd	81+	121+	28.0%	17.0-25.4	3.1%	1.0-1.6
BwSft	81+	121+	26.9%	28.3-42.5	2.0%	2.7-4.1
PjHrd	81+	121+	0.5%	9.2-13.8	0.0%	2.1-3.1
PjSft	81+	121+	15.9%	11.9-17.9	0.0%	2.1-3.1
PoHrd	81+	121+	30.9%	8.6-12.8	0.7%	0.3-0.5
PoSft	81+	121+	28.4%	13.4-20.0	0.1%	0.4-0.6
SpHrd	101+	131+	20.5%	11.1-16.7	4.3%	1.0-1.4
SpLo	121+	151+	52.7%	12.8-19.2	24.7%	5.8-8.8
SpSft	101+	131+	30.3%	8.1-12.1	9.2%	1.4-2.2

The figure below summarizes the changes to the distribution of mature and old growth forest during the term of the plan as a result of forest management activities and age class changes between plans. Changes of significance during the term are mainly in the white birch dominated forest units as a result of under harvesting those stands due to low volumes and poor quality product yields. Over time as the demand for low grade white birch increases it is expected that harvesting of white birch will increase and the age distribution will track towards the 100 year target.

The spruce forest units remained well above the 100 year target range as a result of the amount of spruce stands that were within the 60-100 year age classes at the start of the plan. Harvest allocations must be established to in a fashion that groups adjacent stands to minimize costs while working towards meeting the desired age class structure. As a result, some of the older, isolated spruce stands could not be operated in. Over time as operations move across the landbase it is expected that isolated patches of older spruce stands will be captured in conjunction with of forest types. It is also important to maintain a portion of the mature/old spruce stands on the management unit to compensate for the lack of stands within the 20-60 year age classes.

The jack pine forest units are currently tracking towards the desired 100 year range with the expectation that at by year 2040 there will be an excess of mature and old stands on the management unit as a result of the heavy skew in age class towards the younger age classes.

The poplar forest units remained well above the 100 year target and continued to move further away from the desired range as a result of increasing stand age. The increased demand for poplar across the province will likely increase the demand beyond supply during the next couple of plan cycles. This increased demand will make poplar more marketable and promote the harvesting of the older aged stands before they naturally deteriorate. There will also be a dramatic drop in the older age classes of poplar by year 2040 as a result of the poplar levels in the 1-60 year age classes.

Forest Unit	**Old Growth Age Classes**		**Condition 2000**	**Condition 2005**	**Desired Range at year 100 +/- 20%**
	Mature + Old Age	**Old Age**			
BfAll	81+	101+	9.3%	14%	17.0
BwGL	81+	121+	41.6%	55%	17.9
BwHrd	81+	121+	28.0%	37%	17.0
BwSft	81+	121+	26.9%	35%	28.3
PjHrd	81+	121+	0.5%	3%	9.2
PjSft	81+	121+	15.9%	14%	11.9
PoHrd	81+	121+	30.9%	34%	8.6
PoSft	81+	121+	28.4%	32%	13.4
SpHrd	101+	131+	20.5%	29%	11.1
SpLo	121+	151+	52.7%	49%	12.8
SpSft	101+	131+	30.3%	27%	8.1

The general trend for boreal forest types on the Wawa Forest appear to be moving towards the desired 100 year range as a result of both current and past forest management activities. This trend will be difficult to track in the future as a result of the amalgamation of the forest, the increased complexity of forest management plans, and the fragmentation of forests into sub units.

Table RPFO-13shows the areas associated with forest unit and age class combinations on the Wawa Forest. Achieving the desired range is largely dependant on access to sites within the age class needed to meet planned targets. Currently there is a large amount of area on the Wawa Forest that is too costly to harvest due to the amount of road construction required. During the next 20 year time period access to these areas is expected to increase and the forest will be managed to move towards the desired ranges for old growth age classes.

1.4.2 Forest Age Structure (Great Lakes-St. Lawrence Forest Types)

Objective

Achieve a distribution of stand ages and tree ages within stands similar to what would occur with natural disturbances in this part of the Great Lakes-St. Lawrence Forest Region.

Targets

Maintain an age class structure for each forest unit that maintains the mature and overmature age groups of forest within +/- 20% of the bounds of natural variation. [Target percentages are shown in Figure 8, with current conditions also shown for comparative purposes.]

For those forest types with multiple ages of trees within stands, maintain the distribution mature and old age tree stages in harvested stands within +/- 20% of the bounds of natural variation

Figure 8 – Old growth targets for shelterwood forest units

Forest Unit	Old Growth Age Groups		% of Forest Unit Area in Old Growth			
			Mature + old		Old only	
	Mature + old age groups	Old age groups	Current Forest Condition	Desired Future Forest at Year 2100 (+/- 20% of natural benchmark)	Current Forest Condition	Desired Future Forest at Year 2100 (+/- 20% of natural benchmark)
			%	%	%	%
ByUS	121+	141+	70.4%	9.0-13.4	39.3%	4.9-7.3
HdUS	121+	141+	15.7%	15.8-23.6	5.6%	7.4-11.0
OcAll	101+	131+	48.5%	24.1-36.1	17.2%	8.0-12.0
PwrUS	121+	161+	68.3%	6.1-9.1	49.1%	2.2-3.2

There have been little to no harvesting or silvicultural activities performed on the Wawa Forest in any of the partial harvest forest units as a result of their old age, poor quality, high cull factors and limited marketability of pulpwood grade material. Much of the resulting forest condition that exists in the Great Lakes St Lawrence forest units is a result of past high grading and the removal of high quality yellow birch, white pine, and white spruce. There has been a significant shift on the forest over time from the spruce-pine-yellow birch stands towards a sugar maple dominated forest that generally becomes excessively frost cracked by the 14 inch diameter size. Clergue continues to work with OMNR to develop acceptable forest operations prescriptions to encourage harvesting and regenerating the tolerant hardwood and white pine stands to improve the condition of the forest and move the age class structure towards to desired 100 year target.

All of the species associated with the Great Lakes St Lawrence forest units are long lived species and are not likely to see much of a change in the distribution of old growth over the short term. An increased demand for hardwood pulpwood may shift some of the harvesting horsepower on the management unit into many of these unmanaged stands on the Wawa Forest.

2. Provision of Forest Cover

2.1 Wildlife Habitat

Objective

To maintain an adequate supply of habitat for all indigenous wildlife species and to maintain, protect, or enhance where needed, critical habitat for vulnerable, threatened, and endangered species on the Forest. The North East Regional list of featured species was used for the wildlife habitat objective, which appears in Figure 9. The marten is a locally featured species and along with the Pileated Woodpecker (a featured species in South Central Region), was managed specifically in the habitat management targets and strategies. These species are known to live in many areas of the Wawa Forest. The planning team was confident that by managing for this list of species, forest cover and wildlife habitat for all indigenous species would be maintained.

Caribou represents a unique challenge in the development of forest cover and habitat objectives because of the lack of a comprehensive strategy for managing the remnant coastal population. The caribou target is based on providing a short term, mitigative solution for this plan with the expectation that a caribou strategy for the Lake Superior Coast will be explored and developed by the MNR.

Targets

Ensure that the fluctuations in the amount of preferred habitat for the North East Regional list of featured species, in addition to the Pileated Woodpecker from the South Central Regional list of featured species, are within the range of natural variation through ten terms (100 yrs).

Manage for the landscape and stand level habitat requirements of marten and pileated woodpecker, across the management unit. To achieve this objective, at least 10-20% of the forest which has the capability to produce marten should be kept in suitable habitat conditions. Silviculture practices that retain cavity trees, snags and downed woody debris will be employed to ensure adequate forage/nesting/denning sites for these species.

Manage for known nesting sites for eagles, osprey, peregrine falcons, other hawks and owls, and herons.

Mitigate the potential effects of harvest on the unique habitat requirements of the caribou population along the coast of Lake Superior by designing harvest allocations and road access to minimize predator access in this area.

Manage for the critical habitats of other vulnerable, threatened, or endangered species as they are encountered.

Note:

Specific habitat targets for the selected set of wildlife species are outlined in Table FMP-18

Figure 9 - Habitat Targets for Wildlife Species

Wildlife Species	Current Habitat Area (ha)	Target Habitat Area (+/- 20% of natural benchmark, ha)
Blue-spotted salamander	0	n/a
Spruce grouse	2463	1695-3211
Ruffed grouse	8235	6588-21641
Great grey owl	56270	28782-67524
Black-backed woodpecker	57233	22774-70680
Pileated Woodpecker	21681	10659-48383
Least flycatcher	69738	33017-83686
Boreal chickadee	21513	6805-25816
Ruby-crowned kinglet	19378	10463-23254
Bay-breasted warbler	147104	74440-180641
White throated sparrow	11255	9004-48756
Snowshoe hare	28999	23119-83502
Northern flying squirrel	156596	81191-187915
Deer mouse	10810	8648-55710
Black bear (foraging)	3192	1544-4068
Black bear (winter)	81657	44601-109717
Marten	115108	54218-145634
Lynx	28999	23199-83502
Woodland Caribou	1334	1118-1909
Moose (foraging)	10732	8586-52762
Moose (wintering)	129418	88347-155302

It is not possible to track the changes to wildlife habitat for the target wildlife species on the Wawa Forest as a result of the amalgamation of the Wawa and Algoma Forest's for the development of the 2005-2025 FMP and the change from the Northeast Region habitat matrix to the South Central Region matrix. It is also difficult to track and understand the changes made to the habitat matrix between plans through improved knowledge and understanding of habitat requirements. Any changes made to the habitat matrix in SFMM should be described by OMNR during the FMP training sessions to give foresters and planning team members a better understanding of the impacts of these changes. Table RPFO-16 shows the breakdown of area that meets wildlife habitat requirements. This table will provide values for comparison in future plans if there are no changes to the matrix.

Snag tree retention was applied to clearcut harvesting activities to retain suitable vertical structure and downed woody debris to meet the intent of the pileated woodpecker and pine marten guidelines. Operators on the management unit were instructed to leave between 6-12 large diameter trees per hectare to satisfy the snag tree requirements in the FMP. It took a significant amount of time and training to ensure that operators were leaving the required snag trees during harvesting operations. Snag tree plots were established by Clergue staff to monitor compliance with the FMP. By the end of the term operators had integrated the requirements into everyday work and were continually meeting the snag tree requirements.

Any stick nests encountered during forest management activities were identified and reported to OMNR and the appropriate reserve was applied to the nest as required in the AOC prescriptions for the FMP. At times nests were identified after operations were taking place within the required reserve portion of the nest site. When this happened, operations were modified and pulled back the required distance to minimize the disturbance the nest site.

Operations within the Mishi area took place in the winter months on roads built to winter road standard. All roads were naturally abandoned and all crossings were removed at the end of the harvesting operations. There was no identified increase in predator populations as a result of the forest management activities in the area. Clergue and OMNR have developed a Caribou AOC for the 2005-2025 Algoma Forest FMP to address the concerns over forest management activities along the Lake Superior Cost to the west of Wawa.

2.2 Forest Productivity and Soil Quality

Objective

To ensure that losses are minimized to the area occupied by production forest and to ensure that site productivity is maintained.

Figure 10 - Forest Productivity Targets

Managed Forest Area Available for Timber Production (ha)	Year 2000	Future Forest (2100)
Forested Land - Production	288,055	285,781

The amount of forested land on the Wawa Forest decreased slightly from the start of the 2000 plan. The reasons for this change are possibly the result of final changes to the Lands for Life parks and conservation reserves boundaries and an exercise using aerial photography to determine the classification of B&S stands. Roads, landings, and additional gravel pits have also contributed to the reduction in productive managed Crown forest.

The changes to stand classifications and amalgamation of the management unit have made it difficult to determine the exact reason for the decrease in productive crown forest. Changes in staffing at Clergue also make it impossible to determine the exact criteria used to determine how the productive crown land was calculated for the 2000-2020 FMP.

2.3 Global Air Quality

Objective

Contributing to a global air quality initiative by ensuring forest management activities include strategies to offset forest cover removal.

Targets
No loss of productive forest land to erosion or other site damage caused by forestry operations, outside of permitted roads, landings, and gravel pits.

No net loss of site productivity from forestry operations.

To not artificially reduce the net forested area above and beyond forest access roads, landings and gravel pits.

Initiate reforestation of harvest blocks generally within 2 years following completion of operations.

Figure 11 - Targeted Productive Crown Forest Area

Total Productive Crown Forest Area (ha)		
Year 2000	Year 2020	Future Forest (Year 2100)
313,009	310,170	310,739

Similar to the soil productivity targets, it is difficult to measure the impacts on global air quality over a five year plan term. The same reasons as listed above for soil productivity make tracking changes difficult until the management unit becomes set in its boundaries over a longer period of time than 5 years.

Control measures were applied during the term of the plan to ensure that there was no reduction in site productivity. Operations were shut down during period of soil saturation where the potential for rutting was high. Sensitive sites were harvested in the winter as much as possible to reduce the impact of forest operations. Cut to length processors became increasingly popular on the management unit as a tool to reduce site impact and retain site nutrients by retaining slash within the harvest area as opposed to bringing it to roadside and having it burned.

Planned renewal activity generally took place on the management unit within two years of the completion of harvesting operations. At times renewal work was not initiated until after two years of completion due to the small size of depletion and the need to group adjacent operating areas to establish a more economical renewal program.

2.4 Water Quality and Fish Habitat

Objective
To ensure the protection and maintenance of water quality and habitat for fisheries resources within watersheds where forest management activities occur.

Targets
No damage to water quality or fish habitat downstream of any road crossing.

No damage to important fish habitat at any road crossing.

No damage to water quality or fish habitat by any adjacent forestry operations.

Annually prepare a compliance plan that addresses monitoring programs, scheduling inspections of forest operations, and training for forest operators with respect to best management practices near water and other high-risk areas.

Clergue installed 3 new arch culverts on the Tik and Crossover Roads to replace existing culverts. The installation of the ach culverts returned the steams to the natural bottom conditions and allowed water to flow more *naturally downstream than before. It is expected that this work will enhance the water quality of these streams by returning them to a more natural condition.*

There was no known damage to water quality or fish habitat as a result of forest management activities during the term of the plan. Streamside riparian buffers were established around all streams encountered to protect and maintain the integrity of the streams.

Road approaches and water crossing are installed in a manner to minimize impacts to habitat and water quality. Where possible all roads and water crossings are planned and installed at 90° to the road in order to minimize the impact on the stream.

3. Community Economic Sustainability and Multiple Benefits to Society

3.1 Wood Supply

Objectives

To provide a continuous, predictable, and sustainable supply of timber for the Weyerhaeuser OSB mill near Wawa, St. Marys Paper and Domtar - Lumber and Veneer mills in Sault Ste. Marie, and the Columbia Forest Products -Levesque Division mill in Hearst. The Wawa Forest will contribute a portion of the overall wood supply requirements of these mills and to provide a supply of timber for personal use and to identify underutilized forest fibre.

Targets

Wood Supply Targets based on legal supply agreements and commitments as listed in Figure 12

Figure 12 – Wood Supply Commitments

Mills	5 Year Target Volume by Species (m^3)
Weyerhaeuser OSB mill in Wawa	400,000 m^3 of white birch OSB logs (80,000 m^3/yr)
	250,000 m^3 of poplar OSB logs (50,000 m^3/yr)
	100,000 m^3 of tolerant hardwood OSB logs (20,000 m^3/yr)
St. Marys Paper Mill in Sault Ste. Marie	347,500 m^3 combined of spruce, jack pine, and balsam fir pulpwood and sawlogs (69,500 m^3/yr)
Domtar - Lumber and Veneer Mill in Sault Ste. Marie	86,000 m^3 combined of tolerant hardwood and white birch veneer & sawlogs (17,200 m^3/yr) Note: Commitment is for all of the above products that are available, estimated at 17,200 m^3 in the 1995-2000 forest management plan.
Columbia Forest Products - Levesque Division Plywood mill in Hearst	27,670 m^3 of poplar veneer logs (5,534 m^3/yr) Note: Commitment is for all of the available Po veneer, estimated at 5,534 m^3 in the commitment letter.
Domtar - Lumber and Veneer Mill in Sault Ste. Marie	26,000 m^3 of white pine logs (5,200 m^3/yr) Note: Commitment is for all of the above products that are available, estimated at 5,200 m^3 in the 1995-2000 forest management plan.

Weyerhaeuser in Wawa received 23 % of their wood supply commitments during the term. The amount of fibre delivered to the mill was far lower than the target due to the lack of harvesting in the tolerant hardwood forest units, the low volumes associated with white birch stands on the management unit, and the lack of harvesting power during the term of the plan. The poplar allocations on the management unit were harvested at close to full capacity with the exception of some isolated patches within harvest blocks that were never entered. The application of OFA Opportunity # 11 Item #1 helped to make the white birch forest units more economical to harvest, but local contractors can not sustain a full diet of salvage blocks due to their marginal economic returns.

St. Marys Paper received 84 % of their supply commitment of SPF during the term of the plan. This was mainly a result of slightly higher yields of conifer from the birch, and poplar forest units than expected during the development of the plan and the full harvest within the PjSft forest unit. The relatively stable demand for conifer during the term of the plan also helped to maintain harvest levels close to planned targets.

Columbia Forest Products received 40% of the woods supply commitment from the Wawa Forest during the term of the plan. This level was lower then the target due to the slight under harvest in the PoSft forest unit, which may have increased the veneer yields and the age of the poplar stands harvested during the term. Much of the older poplar has begun to rot and does not meet the required product specifications for veneer.

The Domtar sawmill in Sault Ste Marie received only 2% of their hardwood commitment from the Wawa Forest. This was due to the generally poor quality of wood within the tolerant hardwood forest units on the Wawa Forest and the lack of cutting power associated with hardwood management. The 2000-2020 FMP also marked the first term of management in the tolerant hardwood and white pine forest units using the marked tree system, which was not favourably received by local contractors. This mill also had a white pine commitment from the Wawa Forest that was deferred to other mills because Domtar stopped processing pine late in the 1995-2000 plan as a part of a change in strategic direction by the company.

The available harvest area and associated volumes were not fully utilized due to the stand and site conditions associated with the Wawa Forest. The wood supply agreements that were made between OMNR and the forest companies in the past were well above the levels that the Wawa Forest can be expected to produce. The 2000-2020 FMP also saw a 50% reduction in available harvest area from the previous plan.

There has been no impact to local community stability as a result of harvest levels during the 2000-2005 plan term. The main contributing factors to community stability are more related to energy costs, wood costs, the rising Canadian dollar in relation to the U.S. dollar, and the lack of forestry workers, and not to current harvesting levels. Table RPFO-18 shows the summary of species utilization during the term of the plan.

3.2.1 Commercial Tourism

Objectives

To maintain a suitable and sustainable environment adjacent to existing remote tourism establishments and to maintain a suitable environment necessary for the sustained viability of existing road-based tourism.

3.2.2 Land and Water Based Recreation

Objective

To maintain a suitable environment for recreational use of the forest.

Target

To minimize negative impacts of forest management on recreational users of the forest. Maintain aesthetics near designated canoe routes, hiking trails and cottage lots by minimizing the visibility of timber management activities.

The FMP had AOC prescriptions to protect any these values that were identified in NRVIS. There were no issues raised by users of these values during the term of the plan and Clergue operations staff work to ensure that viewscapes on cottaging lakes were maintained.

3.2.3 Other Commercial Activities

Objectives

To minimize negative impacts of forest management on other commercial forest activities such as trapping, mineral exploration, commercial berry picking, etc.

Clergue has worked closely with resource based tourism operators during the preparation of the 2005-2025 FMP in order to complete Resource Stewardship Agreements (RSA). This has entailed discussions with 4 tourist operators with the signing of 2 RSAs. These agreements have set the stage for a clear understanding of tourist operator interests and the approach to dealing with these interests. When forestry operations are scheduled within areas of interest, specific meetings are held with the interest groups that may be affected.

Road use management strategies have been developed as an integral part of the forest management plan for the Algoma Forest for the term 2005-2010. These strategies address specific land use/resource management issues that were raised during the preparation of the forest management plan.

The Company compliance/monitoring program documents activities that may have taken place within Areas of Concern.

Clergue plays an active role in communicating with the Local Citizens Committee and providing technical/professional support for their decision making processes. Individual members keep their respective groups appraised of current forest management activities.

Local resource users are encouraged to meet with Clergue and partner company staff during the development of each annual work schedule to ensure that they are aware of upcoming forest management activities within their geographic range. Partner companies have worked closely with groups like the local snowmobile club to ensure that the impacts of forest management activities are minimal to their use of the local trail system.

Partner company staff have kept trappers informed of where and when operations will be taking place within their trap line and identifying sites where nuisance beavers could potentially destroy a main access road.

Activities such as aerial herbicide application and slash pile burning go through a significant amount of public review prior to the implementation. Clergue has worked with local tourism outfitters to minimize the impacts of these silvicultural treatments on their activities by working together to determine an appropriate start date and communicating on a regular basis while the projects are ongoing.

Buffers has been applied to all trapper cabins encountered during forest management activities to protect the adjacent forest cover and maintain the aesthetic appeal of the intact forest around each cabin. The location of each trapper's cabin that is encountered is marked using GPS and the coordinates are sent to the OMNR to update the NRVIS database. Timely updates to the NRVIS database are critical to the mapping and protection of known values.

3.3 Cultural Heritage Values

Objective

To protect cultural heritage values that may be affected by forest management operations.

AOC prescriptions were developed for the protection of both known and high potential cultural heritage values on the Wawa Forest. Some sites that were identified as high potential were checked by an archaeologist and withdrawn prior to any forest management activities taking place.

No new cultural heritage sites were identified during the term.

3.4 First Nations

Objective

To protect natural resource features, land uses, and values which are specifically used by, or of importance to local First Nation communities that may be affected by forest management operations.

Targets

Ensure that First Nations are consulted during preparation of the forest management plan and annually informed of the intended forest management activities on the Wawa Forest.

Identify and document all known natural resource features, land uses, and values which are specifically used by, or of importance to local First Nation communities

Clergue has three first nation communities within its boundaries; Garden River First Nation, Batchewana First Nation and Michipicoten First Nation. Clergue has actively dialogued with Garden River First Nation through the Garden River Forestry Association and directly with Chief Buckell in Michipicoten. Clergue and the MNR have worked closely with First Nations during the preparation of the Algoma Forest Management Plan. This has included preparing a Native Background Report and a Native Values Map. Clergue has initiated discussions for harvesting operations with Garden River and Michipocoten.

3.5 National and Provincial Parks

Objective

To ensure that due consideration is given to the management plans, goals, objectives, and concerns of Pukaskwa National Park and Ontario Parks (Lake Superior, Potholes, Michipicoten Post, and the Shoals Provincial Parks) in the course of developing the forest management plan.

Clergue staff continue to work and communicate with the parks staff to give due consideration to their goals and objectives in the development of FMP's. The Pukaskwa Park staff have shown interest in performing a group prescribed burn in cutover area adjacent to the park with the expectation that the fire would be managed in a manner to burn into a portion of the park as well.

Increased access to Pukaskwa Park is one of the main concerns of parks staff. Clergue Forest Management staff continue to work with the Park staff to ensure their values are protected and the integrity of the park in not jeopardized as a result of current forest management practices.

3.6 Access Management

Objective

Identify present road accessible areas, future road accessible areas, and areas which are likely to remain inaccessible by roads under present management.

Targets

Map the following categories of road accessible and inaccessible areas:

Category	Description
Present Road Access - Good roads	Easy vehicle access
Present Road Access - Poor roads	Difficult vehicle access (possibly subdivide into 4x4, atv)
Present Road Access - Closed or decommissioned roads	No motorized road access (remote tourism and recreation - silent sports)
Future Road Access - next 20 years	Likely accessed in the next 20 years
No Road Access - Values incompatible with roads	Roads not permitted to protect ecological, cultural, or economic values dependent on no road access
Low Potential Road Access - e.g. Inaccessible areas	Unlikely to be accessed due to topography or water

The above access management plan has not been completed as described. Clergue now operates is GIS capabilities through Domtar and uses ArcMap9, which allows for instant updates to take place with regard to road locations, changes to road conditions, access restrictions, and proposed road locations.

Setting road use conditions is the responsibility of OMNR and signs are posted on the management unit where this type of information needs to be shown to the public. The Roads table in the FMP also describes those restrictions imposed on roads by OMNR. It would be most beneficial for OMNR to provide a road coverage to Clergue indicating the locations where access restriction occur. This would allow for an almost instantaneous update of operations maps that would identify all restriction on roads within the management unit.

Road construction is updated annually using aerial photographs to map the location of new construction and identify where culvert removal has taken place. These continual updates are shown on operations maps once completed. Roads constructed outside of harvest allocations are typically mapped using GPS and added to Clergue's roads database.

It is unclear as to how this target affects community sustainability and whether targets were achieved have no impact on sustainability.

4. Silviculture
4.1 Application of Silviculture Program
Objective
Manage the forest in a manner that is consistent with maintaining and improving the productivity, health, vigour, and quality of the forest at a sustainable level as specified by the selected management alternative.

Targets
Apply silviculture treatments at the following levels over the first five-year term of the FMP, within the limitations imposed by such factors as topography:

Harvest:	16,331 hectares
Renewal:	16,098 hectares (all regeneration)
Tending:	3,439 hectares

Silvicultural treatments were in line with harvesting activities on the management unit. All silviculture activities fell short of planned targets as a result of not cutting the full harvest area in the 1995-2000 and 2000-2005 plan terms. The under-harvest of the allocations is expected to carry forward to targets set for the 2005-2010 plant due to the carry forward of treatments into subsequent plan terms.

Tree planting was performed on 79% of the clearcut area during the term of the plan, which is significantly more than the planned target of planting 40 % of the clearcut area. The results of this level of planting will lead to higher stocking, better growth rates and shorter rotation periods in the future to maintain current harvesting levels. The planting performed also reverses past practices of natural regeneration, low stocking levels and long time periods for stands to reach free-to-grow.

Only 46 % of the planned tending was completed on the management unit. This is mainly attributed to harvesting taking place on sites that did not require tending, such as lowland spruce stands, and the difficulty of attaining contractors to perform aerial spray every year. Ground spray contractors were acquired to tend "critical" sites based on priorities set by Clergue until such time as an aerial contractor could be attained. Clergue will continue to modify spray planning to make projects on the Algoma Forest more attractive to local full service contractors.

Clergue has continually cruised all mixedwood and white birch dominated stands prior to harvest to determine the volumes and whether stands meet the criteria of OFA Opportunity # 11 Item #1 low volume salvage operations.

A total of 723 hectares were harvested as salvage under OFA Opportunity # 11 Item #1. Renewal activities are ongoing on these sites. This work has lead to increased investment in silvicultural activities on sites that would have otherwise been bypassed and remained as low volume, low value stands in perpetuity. Many of the sites treated are quite productive and have the potential to significantly increase the future value and volume of timber on the Wawa Forest.

The activities performed during the term of the plan will not be measurable until in relation to achieving plan objectives until at least the development of the 2010-2030 FMP. The use of current renewal and tending activities are manipulating the forest to ensure it grows and develops as planned.

Harvest levels did not meet planned targets as a result of stands dominated by low volumes, poor quality and difficult access. Contractors and forest companies work to try and harvest as much area as possible in the low volume stands that tend to dominate the Wawa Forest landscape, yet they need to establish a delicate balance between cutting low volume and normal volume stands to ensure economic survival. Not achieving planned harvest levels has not shown any impact on local mills of community viability.

By not reaching the planned harvest level in any of the past FMP's it was not possible to reach the target level of regeneration set at the beginning of the plan. The area deemed free-to-grow exceeded the area harvested by 38 %, which is an indication that regeneration successes were not a priority in the past or that there was a significant backlog of area that was assessed during the 2000-2005 plan term.

Tending levels were below the planned targets due again to not meeting the harvesting target or the artificial regeneration target. All known areas requiring tending had been treated by the end of the 2004 AWS with the exception of two sites that were tended in 2005.

The preferred silviculture treatment packages have remained relatively unchanged in the 2005-2025 FMP.

4.2 Quality of Timber
Objective

Improve the quality of timber over time to provide the optimum level of desired wood products to mills dependent on the Forest as a partial source of their supply.

Clergue has continually worked towards improving the quality of timber on the Wawa Forest by:
The use of certified tree markers in the PWRus stands that were operated in during the term
Harvesting and renewal work in low volume poor quality salvage blocks
Planting the appropriate species on the appropriate microsite
Working with the tree improvement program and the Lastheels Black Spruce Seed Orchard in particular
The use of pre-commercial thinning and basal bark herbicide application to retain and promote the dominant and co-dominant trees with the potential to develop into high value products in tne future

Free-to-grow assessments on the Wawa Forest show a movement towards increased stocking levels and shortened time frames to reach free-to-grow as a result of current silvicultural activities.

4.3 Increase productivity
Objective
Maintain or increase timber productivity at the stand level.

Target
Renew stands to the desired standards (desired stocking levels and time frame) as prescribed for free-growing status for the target forest unit. (see Table FMP-10)

Clergue implemented second year assessments on all planted stands established on the Wawa Forest during the term of the plan. The methodology used was similar to that described in the Free Growing Regeneration Assessment Manual for Ontario Draft. The purpose of the assessments was to identify sites where critical shortfalls may occur in stocking levels or where future tending will be required to ensure the sites regenerate to meet the stocking targets set on the silvicultural ground rules.

The majority of the white birch dominated stands on the Wawa Forest were cruised to determine the pre-harvest volume and identify those stands that met the criteria for OFA Item # 11 Opportunity #1 salvage operations in low volume low quality stands. The re-alignment of stumpage applicable to the use of OFA Item # 11 Opportunity #1 has made stands operable that would have otherwise been bypassed due to economic constraints. Many of these stands were under performing in relation their productive capacity as a result of the past removal of high value conifer and the retention of poor quality off site species. The increased renewal funding from these operations has also increased the level of silvicultural activities applied to sites that may have otherwise been selected for natural regeneration. Clergue will continue to assess stands for the application of OFA Item # 11 Opportunity #1 and maximize its use where required to improve the productivity of otherwise degraded sites.

Artificial regeneration on the management unit will continue to contribute to the achievement of this objective. Stands were renewed in accordance with the approved silvicultural ground rules for the FMP and stocking levels were in line with those targets set to ensure stands regenerate as forecast.

4.6 Determination of Sustainability

Much of the required review for this section was discussed in section 4.5 Assessment of Objective Achievement. The text below will summarize any noticeable shifts in the desired indicators. The 2000-2020 Forest Management Plan for the Wawa Forest was developed in accordance with the 1996 Forest Management Planning Manual (FMPM) and the objectives may have varied somewhat from those described in Part A, Section 1.2.6.1 of the 2004 FMPM.

As a result of the amalgamation of the Algoma and Wawa Forest's during the development of the 2005-2025 FMP a lot of the indicators of sustainability were measured across the amalgamated landbase and make the completion of comparisons over time difficult. A five year period is a relatively short period of time to try and assess whether the forest is shifting in any one direction as a result of forest management activities. Several factors can play into short term shifts in forest cover, forest productivity, social and economic gains etc. This must be taken into account in the determination of sustainability in order to avoid making drastic, often unnecessary changes to plan objectives.

There has been very little movement in the condition of the forest during the term of the plan that would lead to any indication that there are significant shifts in composition, productivity, or diversity at the landscape level. The forest unit distribution between the start and end of the plan remained within the ± 20 % range of the bounds of natural variation.

Harvest levels are below target for all species on the Wawa Forest as a result of local demand and an age class structure that contains a significant amount cull or poor quality low value products. There have been no closures to shareholder mills during the term of the plan which would indicate that the local forest industry is adapting to the changing forest condition. There has been a significant increase in the demand for poplar and white birch from the management unit as a result of the Weyerhaeuser mill in Wawa increasing production and the rise in price and demand for OSB near the end of the term. There has also been increased interest in the tolerant hardwood pulpwood from the Wawa Forest, but there is yet to be an established market for the fibre.

Increased operations within the white birch dominated stands have allowed Clergue to increase planting of white pine on the management unit. There has been a major negative impact on established white pine plantations from mortality as a result of blister rust. This can be attributed to poor site selection, an overly aggressive attempt to increase white pine in the past, and the lack of tending during the 1995-2000 plan term. Clergue is now spending a significant amount of time planning out the selection of sites where white pine rehabilitation will take place in order to minimize the losses in the future.

It is unknown what, if any changes were made to the habitat matrix used in SFMM between the development of the two most recent FMP's. As a result of any unknown changes and the amalgamation of the Wawa and Algoma Forest's the wildlife habitat changes are not comparable. All stands that were managed during the term were managed to provide habitat for provincially significant species through the retention of large snag trees, downed woody debris, and appropriate residual patches.

The majority of the white birch dominated stands on the Wawa Forest were cruised to determine the pre-harvest volume and identify those stands that met the criteria for OFA Item # 11 Opportunity #1 salvage operations in low volume low quality stands. The re-alignment of stumpage applicable to the use of OFA Item # 11 Opportunity #1 has made stands operable that would have otherwise been bypassed due to economic constraints. Many of these stands were under performing in relation their productive capacity as a result of the past removal of high value conifer and the retention of poor quality off site species. The increased renewal funding from these operations has also increased the level of silvicultural activities applied to sites that may have otherwise been selected for natural regeneration. Clergue will continue to assess stands for the application of OFA Item # 11 Opportunity #1 and maximize its use where required to improve the productivity of otherwise degraded sites.

Several of the target statements for the FMP referred to the historic forest condition. There has been no peer reviewed document created to date that depicts what the historic condition was for the Wawa Forest. The development of this report is ongoing, but the relevance of the historic forest condition in relation to the current environment must be considered. As we move to a more global society there are increased opportunities for the introduction of invasive pests to our native species, climate change will have a significant impact on local site conditions making the growth and survival of some species impossible in the future. It is also not very well understood why there is such a pre-occupation with the historic forest condition when discussing a dynamic system that has shown to change and adapt continually over time in relation to changes in environmental conditions.

Clergue has three first nation communities within its boundaries; Garden River First Nation, Batchewana First Nation and Michipicoten First Nation. Clergue has actively dialogued with Garden River First Nation through the Garden River Forestry Association and directly with Chief Buckell in Michipicoten. Clergue and the MNR have worked closely with First Nations during the preparation of the Algoma Forest Management Plan. This has included preparing a Native Background Report and a Native Values Map. Clergue has initiated discussions for harvesting operations with Garden River and Michipocoten.

The only noticeable objective that is continually below target is the harvest levels on the management unit and the achievement of wood supply commitments. This is largely driven by the local forest industry and product markets over time. Individuals from local mills allocate their harvest blocks and look after the management of the harvest operations. This does not appear to be a significant problem at this time because the forest industry has proven to be adaptive over time in relation to forest conditions and market changes.

Objective achievements are not all being met as a result of the current market conditions, available work force, and the condition of the forest as a result of past approved forest management activities. As mentioned earlier, the use of OPF Opportunity # 11 Item #1 is ongoing to reverse the past 100 years of product selective harvesting that took place on the Wawa Forest. Low volume sites would generally be bypassed and perpetuate the conditions created on the Wawa Forest as a result of fire suppression and continual high grade harvesting.

There does not appear to be any relationship between the balancing of multiple objectives and the under harvest of low value species from the management unit.

The levels of achievement on the management unit are all related to forest management and the commitment of Clergue, Partner Company, and OMNR staff to work together to meet the goals of managing the forest in a sustainable manner.

Concluding statement:

There are no indications that the implementation of planned operations has lead to the unsustainable management of the Wawa Forest. The local communities remained relatively un-phased by not meeting the harvesting and regeneration targets in the plan. This FMP spanned a 5-year period, which is relatively short in comparison to a single harvest rotation and it is difficult to understand how the actions of a single plan term can result in unsustainable management.

The development of the 2005-2025 FMP should have helped to correct any deviations from planned targets and minimize the impacts to the environment and ecological integrity of the forest. All forest units were managed in accordance with the approved silviculture treatment packages and at the end of the plan none of the forest units area and age class distributions had deviated from the ± 20% bounds of natural variation.

Market conditions play a major role in forest management activities. This is one limitation that is beyond the scope of developing a FMP due to the unpredictable nature of global markets and the production of products traded as commodities.

Values on the management unit were protected to ensure that social and ecological sustainability were not jeopardized as a result of forest management activities. Snag trees, downed woody debris, moose travel corridors and hunting closures increased throughout the term of the plan to ensure pine marten, pileated woodpecker, and moose habitat requirements were satisfied. By providing suitable habitat conditions for provincially featured species it is expected that most of the known vertebrates on the management unit are being managed for.

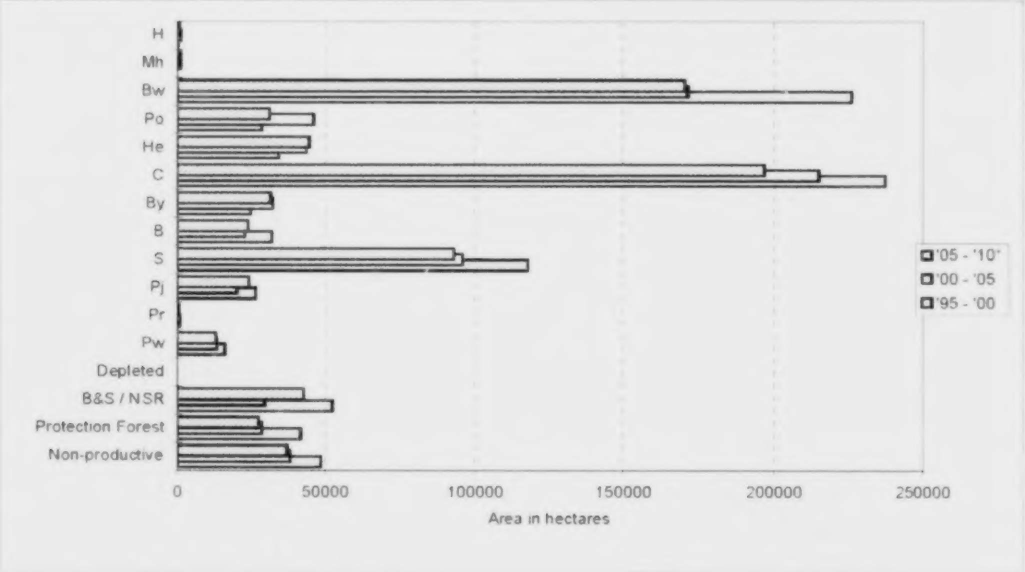
10.0 ANALYSIS TABLES

2006 Independent Forest Audit
Table 1 - Summary of Total Area Under Management

Past and Current Plans - Crown Managed

MU: ALGOMA FOREST

Land Type	Plan Term	Area in hectares		
		Past Plans		Current
		'95 - '00	'00 - '05	'05 - '10'
Non-Forested				
Other Land		3,172	5,687	6,622
Forested				
Non-productive		48,484	38,159	37,112
Productive				
Protection		41,781	28,619	27,468
Production Forest				
B&S / NSR		52,441	29,615	42,757
Depleted		-	-	-
Forest Stands by Working Group				
Pw		16,098	13,254	12,955
Pr		951	649	629
Pj		26,505	20,097	24,363
S		117,795	95,807	92,911
Bf		32,024	22,873	24,026
OC		24,920	32,338	31,682
Mh		237,182	214,850	196,710
By		34,306	43,665	44,634
Po		28,695	46,047	31,167
Bw		225,944	171,329	170,309
He		48	1,076	1,070
Ms		47	4,028	8,213
OH		227	1,291	638
Total Production Forest		797,183	696,919	682,064
Total Forested Land		887,448	763,697	746,644



' species groupings
S = Sw + Sb + S
OC = La + Ce
OH = Or + Oh + A

Sources of Information:
- Algoma & Wawa 2001 IFA Trends & Analysis Report - Table 1
- Algoma 2005 FMP - Table FMP-1
- 2006 IFA Trends & Analysis Report - Table 5

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Table 2 - DESCRIPTION OF FOREST UNITS

Period / MU	Forest Unit[7]		Forest Type	Main Working Group	Site Type(s)
	Code	Name			
1995-2000 / Al	B	Balsam Fir	Conifer	B	
1995-2000 / Al	Bw	White Birch	Intolerant Hardwood	Bw	
1995-2000 / Al	MX	Mixedwoods			
1995-2000 / Al	OC	Other Conifer	Conifer		
1995-2000 / Al	Pj	Jack Pine	Conifer	Pj	
1995-2000 / Al	Po	Poplar	Intolerant Hardwood	Po	
1995-2000 / Al	Pr	Red Pine	Conifer	Pr	
1995-2000 / Al	Pw	White Pine	Conifer	Pw	
1995-2000 / Al	S	Spruce	Conifer	Sw, Sb	
1995-2000 / Al	TH	Tolerant Hardwoods	Tolerant Hardwood	Mh	
1995-2000 / Wa	Bw	White Birch	Intolerant Hardwood	Bw	
1995-2000 / Wa	Oc	Other Conifer	Conifer		
1995-2000 / Wa	Pj	Jack Pine	Conifer	Pj	
1995-2000 / Wa	Po	Poplar	Intolerant Hardwood	Po	
1995-2000 / Wa	Pw	White Pine	Conifer	Pw	
1995-2000 / Wa	Sp	Spruce	Conifer	Sw	
1995-2000 / Wa	Th	Tolerant Hardwood	Tolerant Hardwood	Mh	
2000-2005 / Al	BwCC	White Birch Clearcut	Intolerant Hardwood	Bw	17, 18, 20, 21
2000-2005 / Al	HdSel	Tolerant Hardwood Selection	Tolerant Hardwood	Mh	23-31
2000-2005 / Al	HdUS	Tolerant Hardwood Shelterwood	Tolerant Hardwood	Mh	23-30, 35
2000-2005 / Al	MxC	Mixed Conifer Clearcut	Conifer	Pj, S	11-17, 19-21
2000-2005 / Al	MxH1	Mixed Hardwood 1 Clearcut	Intolerant Hardwood	Po, Bw, Pj, S	11-22
2000-2005 / Al	MxH2	Mixed Hardwood 2 Clearcut	Intolerant Hardwood	Po, Bw, Pj, S	11-22
2000-2005 / Al	OcUS	Other Conifer Shelterwood	Conifer	Ce, He, La	21, 22, 28, 30-34,
2000-2005 / Al	PjCC	Jack Pine Clearcut	Conifer	Pj	13, 15
2000-2005 / Al	PoCC	Poplar Clearcut	Intolerant Hardwood	Po	17-19
2000-2005 / Al	PrCC	Red Pine	Conifer	Pr	11, 12
2000-2005 / Al	PwST	White/Red Pine Seed-Tree	Conifer	Pw	11-14, 16, 20, 21
2000-2005 / Al	PwUS	White/Red Pine Shelterwood	Conifer	Pw	11-14, 16, 20, 21
2000-2005 / Al	SbCC	Black Spruce Clearcut	Conifer	Sb	16, 31, 32
2000-2005 / Wa	BFal	Balsam Fir	Conifer	Bf	3a,3b,5a,6b,5c,8
2000-2005 / Wa	BWgl	GLSL White Birch	Intolerant hardwood	Bw	ST15, 17,18,20,21,27,29
2000-2005 / Wa	BWhd	White Birch - Hardwood	Intolerant hardwood	Bw	5c,7a,7b,15
2000-2005 / Wa	BWsft	White Birch - Softwood Mix	Mixedwood	Bw	1,3a,3b,6a,6c,7a,7b,15
2000-2005 / Wa	BYus	Yellow Birch - Uniform Shelterwood	Intermediate Hardwood	By	ST15, 27,28,29,30
2000-2005 / Wa	HDus	Tolerant Hardwood - Uniform Shelterwood	Tolerant hardwood	Mh	ST15, ST16, 27,28,29,30
2000-2005 / Wa	MHsel	Maple Selection	Tolerant hardwood	Mh	27,28,29,30
2000-2005 / Wa	OCal	Other Conifer - Uniform Shelterwood	Conifer	Ce	ST9, 22
2000-2005 / Wa	PJhd	Jack Pine - Hardwood Mix	Mixedwood	Pj	1,3a,3b,7b,6c
2000-2005 / Wa	PJsft	Jack Pine - Softwood	Conifer	Pj	1,2a,2b,4
2000-2005 / Wa	POhd	Poplar - Hardwood	Intolerant hardwood	Po	5c,7a,7b,10
2000-2005 / Wa	POsft	Poplar - Softwood Mix	Mixedwood	Po	1,3a,3b,6a,6c,7a,7b,10
2000-2005 / Wa	PWus	White Pine - Uniform Shelterwood	Conifer	Pw	ST1, ST6b, ST6c, 11,12,13,15,20,27
2000-2005 / Wa	SPhd	Spruce - Hardwood Mix	Mixedwood	Sp	1,3a,3b,6a,6b,6c,7b,8,10
2000-2005 / Wa	SPlc	Spruce Lowland	Conifer	Sp	8,11,12,13
2000-2005 / Wa	SPsft	Spruce - Softwood	Conifer	Sp	1,3a,5a,5b,6a,6b,9
2005-2010 / Al	BwHd1	White Birch Hardwood East	Intolerant Hardwood	Bw	17, 18, 20
2005-2010 / Al	BwHd2	White Birch Hardwood West	Intolerant Hardwood	Bw	17, 18, 20
2005-2010 / Al	ByUS	Yellow Birch Shelterwood	Tolerant Hardwood	By	23-31
2005-2010 / Al	HdSel	Tolerant Hardwood Selection	Tolerant Hardwood	Mh	23-31
2005-2010 / Al	HdUS	Tolerant Hardwood Shelterwood	Tolerant Hardwood	Mh, By	23-30, 35
2005-2010 / Al	MxC	Mixed Conifer	Conifer Mixedwood	Bf, Pj, La, Sw, Sb, Pw, Pr	11-22, 32-34
2005-2010 / Al	MxH	Mixed Hardwood	Hardwood Mixedwood	Po, Bw	11-22
2005-2010 / Al	MxW	Mixedwood	Mixedwood	Bf, Pj, La, Sw, Sb, Pw, Pr, Po, Bw	11-22, 32-34
2005-2010 / Al	OcAll	Other Conifer	Conifer	Ce, He	21, 22, 28, 30-34
2005-2010 / Al	PjPur	Jack Pine Pure	Conifer	Pj	13, 15
2005-2010 / Al	PoPur	Poplar Pure	Intolerant Hardwood	Po	17-19
2005-2010 / Al	PrAll	Red Pine	Conifer	Pr	11, 12
2005-2010 / Al	PwUS	White/Red Pine Shelterwood	Conifer	Pw, Pr	11-14, 16, 20, 21
2005-2010 / Al	SbPur	Black Spruce Pure	Conifer	Sb, La	16, 31, 32

Sources of Information: Algoma & Wawa 1995-2000 TMPs
Algoma & Wawa 2000-2005 FMPs - Table FMP-6
Algoma 2005 FMP - Table FMP-6

Period/MU	FU Code	Silviculture System	FRI Parameters & Criteria	Additional Information
1995-2000 / Al	B	Clearcut		
1995-2000 / Al	Bw	Clearcut		
1995-2000 / Al	MX	Clearcut		
1995-2000 / Al	OC	Clearcut		
1995-2000 / Al	Pj	Clearcut		
1995-2000 / Al	Po	Clearcut		
1995-2000 / Al	Pr	Shelterwood		
1995-2000 / Al	Pw	Shelterwood/Clearcut		
1995-2000 / Al	S	Clearcut		
1995-2000 / Al	TH	Selection/Shelterwood		
1995-2000 / Wa	Bw	Clearcut/Shelterwood		
1995-2000 / Wa	Or	Shelterwood	>0.3 OC	
1995-2000 / Wa	Pj	Clearcut		
1995-2000 / Wa	Po	Clearcut	>0.3 Po	
1995-2000 / Wa	Pw	Clearcut/Shelterwood		
1995-2000 / Wa	Sp	Clearcut/Shelterwood		
1995-2000 / Wa	Th	Clearcut/Selection/Shelterwood		
2000-2005 / Al	BwCC	Clearcut	Bw > = 0.7	
2000-2005 / Al	HdSel	Selection	Mh > = 0.6 or ((WG=Mh) and (Yb + Aw + Qr + Ms < 0.3))	AGS > = 9m2/Ha
2000-2005 / Al	HdUS	Shelterwood	WG=Mh or WG=Ms or WG=Yb or WG=Qr or WG=Aw	AGS < 9m2/Ha
2000-2005 / Al	MxC	Clearcut	Pw + Pr + Pj + Sb + Sw + Bf + Ce + He + La > = 0.6	
2000-2005 / Al	MxH1	Clearcut	Pw + Pr + Pj + Sb + Sw + Bf + Ce + He + La < 0.6 and (SC=X or SC=1 or SC=2)	
2000-2005 / Al	MxH2	Clearcut	Pw + Pr + Pj + Sb + Sw + Bf + Ce + He + La < 0.6 and (SC=3 or SC=4)	
2000-2005 / Al	OrUS	Shelterwood	WG=Ce or WG=La or WG=He	
2000-2005 / Al	PjCC	Clearcut	Pj > = 0.7	
2000-2005 / Al	PoCC	Clearcut	Po > = 0.7	
2000-2005 / Al	PrCC	Clearcut	Pr > = 0.7	Plantations
2000-2005 / Al	PwrST	Clearcut (with seed trees)	Pw + Pr + Sw > = 0.3 and Pw + Pr > = 0.2	
2000-2005 / Al	PwrUS	Shelterwood	Pw + Pr + Sw > = 0.5 and Pw + Pr > = 0.3	
2000-2005 / Al	SbCC	Clearcut	Sb > = 0.7	
2000-2005 / Wa	BFall	Clearcut	WG='Bf'	
2000-2005 / Wa	BWgl	Clearcut	((WG='Bw') and (By>=0.1 or Mh+Ms>=0.3))	
2000-2005 / Wa	BWrnd	Clear cut	(WG='Bw') and (Po+Bw+Yb+Mh+Ms>=0.8)	
2000-2005 / Wa	BWsft	Clear cut	(WG='Bw') and (Po+Bw+Yb+Mh+Ms<0.8)	
2000-2005 / Wa	BYus	Shelterwood	WG='Yb' or Yb>=0.3	
2000-2005 / Wa	HDus	Shelterwood	(WG='Mh' and Mh<0.6) or (WG='Ms') or (WG='Ab') or (WG='OH') or (WG='Ax')	
2000-2005 / Wa	MHsel	Selection	Mh>=0.6	
2000-2005 / Wa	OCall	Shelterwood	WG='Ce' or WG='OC' or WG='La'	
2000-2005 / Wa	PJhrd	Clear cut	(WG='Pj') and (Pj+Sb+Sw+Bf+Pw+Ce+La<0.8)	
2000-2005 / Wa	PJsft	Clearcut	(WG='Pj') and (Pj+Sb+Sw+Bf+Pw+Ce+La>=0.8)	
2000-2005 / Wa	POhrd	Clear cut	(WG='Po') and (Po+Bw+Yb+Mh+Ms>=0.8)	
2000-2005 / Wa	POsft	Clear cut	(WG='Po') and (Po+Bw+Yb+Mh+Ms<0.8)	
2000-2005 / Wa	PWRus	Shelterwood	(Pw+Pr>=0.3) or (WG='Pw' or WG='Pr')	
2000-2005 / Wa	SPhrd	Clearcut	(WG='Sb') or (WG='Sw') and (Pj+Sb+Sw+Bf+Pw+Ce+La)<0.8	
2000-2005 / Wa	SPlo	Clear cut	(WG='Sb' and UDF2 like *L*) or (WG='Sw' and UDF2 like *L*)	
2000-2005 / Wa	SPsft	Clear cut	(WG='Sb') or (WG='Sw') and (Pj+Sb+Sw+Bf+Pw+Ce+La)>=0.8	
2005-2010 / Al	BwHd1	Clearcut	Bw>=0.5 and Po+Bw+Yb+Ms+Mh>=0.7	
2005-2010 / Al	BwHd2	Clearcut	FU="BwHd1" and (MAPSHEETS west of Wawa Lake)	
2005-2010 / Al	ByUS	Shelterwood	By>=0.4	
2005-2010 / Al	HdSel	Selection	Mh>=0.6	AGS > = 9m2/Ha
2005-2010 / Al	HdUS	Shelterwood	WG='Mh' or WG='Yb' or WG='Ms' or WG='Qr' or WG='Aw' or WG='UH'	AGS < 9m2/Ha
2005-2010 / Al	MxC	Clearcut	Pw+Pr+Pj+Sb+Sw+Bf+Ce+He+La>=0.7	
2005-2010 / Al	MxH	Clearcut	Pw+Pr+Pj+Sb+Sw+Bf+Ce+He+La<0.4	
2005-2010 / Al	MxW	Clearcut	Pw+Pr+Pj+Sb+Sw+Bf+Ce+He+La>=0.4 and Pw+Pr+Pj+Sb+Sw+Bf+Ce+He+La<0.7	
2005-2010 / Al	OrAll	Shelterwood	Ce>=0.4 or WG='He'	
2005-2010 / Al	PjPur	Clearcut	Pj>=0.7	
2005-2010 / Al	PoPur	Clearcut	Po>=0.7	
2005-2010 / Al	PrAll	Clearcut	Pr>=0.7	
2005-2010 / Al	PwrUS	Shelterwood	Pw+Pr>=0.5	
2005-2010 / Al	SbPur	Clearcut	Sb+La>=0.7 and Pw+Pr+Pj+Sw<=0.1	

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Table 3 - Summary of Planned & Actual Harvest Volumes

MU: ALGOMA FOREST

Planned Harvest Volumes

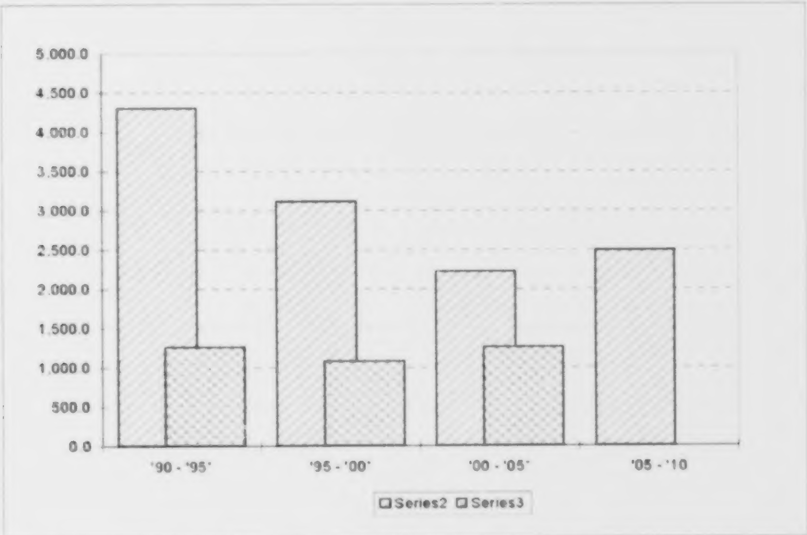
Volumes are Totals for the indicated 5 year period

	Volume in '000's cubic metres			
	Past Plans			Current
Species	'90 - '95	'95 - '00	'00 - '05	'05 - '10
Pw/Pr	328,438	55,777	45,482	41,067
Pj	252,659	156,274	128,978	137,639
S	1,231,862	745,208	359,538	559,930
Bf	163,000	96,236	71,467	95,265
OC	334,852	108,211	5,870	17,340
Po	308,242	376,903	192,422	157,386
Bw	751,715	698,543	412,200	351,112
M	622,512	666,829	700,526	863,644
By	305,232	204,641	220,218	264,039
OH	1,695	1,353	86,814	-
Total Planned Volumes	4,300,207.0	3,109,975.8	2,223,515.0	2,487,423

Actual Harvest Volumes

Volumes are Totals for the indicated 5 year period

	Volume in '000's cubic metres			
	Past Plans			Current
Species	'90 - '95	'95 - '00	'00 - '05	'05 - '10
Pw/Pr	191,730.0	33,415.0	16,130.7	
Pj	231,361.0	139,132.0	163,155.3	
S	454,743.0	246,907.0	252,275.8	
Bf	6,678.0	1,974.0	8,559.1	
OC	909.0	3,486.0	491.6	
Po	57,290.0	192,612.0	152,100.5	
Bw	38,314.0	83,705.0	73,272.2	
Mh/Ms	194,107.0	348,403.0	547,149.8	
By	88,420.0	31,407.0	48,819.7	
OH	2,057.0	1,128.0	30.6	
Total Actual Volumes	1,265,609.0	1,082,169.0	1,261,985.4	



Source: Planned - Algoma & Wawa 2001 IFA Trends & Analysis Report Table 3
Algoma 2005 FMP Table FMP-23
Actual - Algoma & Wawa 2001 IFA Trends & Analysis Report Table 3
Algoma & Wawa 2004 AR Table AR-4

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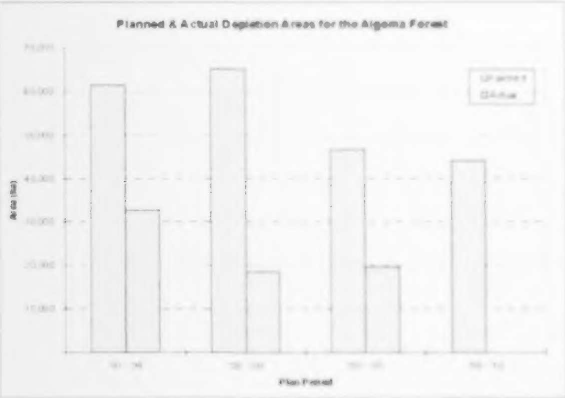
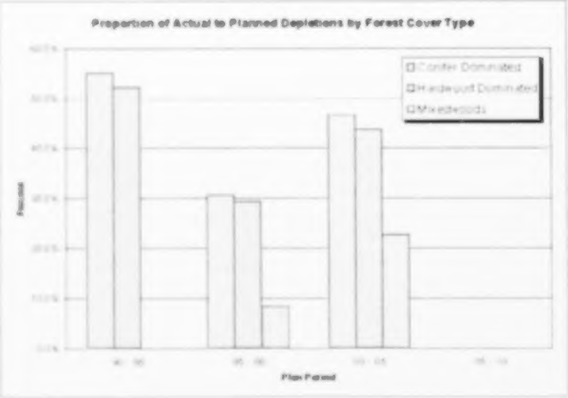
Table 4 - Summary of Planned & Actual Depletion Area

Past and Current Plans

MU: ALGOMA FOREST

	Planned Annual Harvest Area				Actual Depletion Area							
	Area in hectares				Area in hectares							
	Past Plans			Current	Past Plans						Current	
Plan Term	90 - 95	95 - 00	00 - 05	05 - 10	90 - 95		95 - 00		00 - 05		05 - 10	
					Harvest	Natural	Harvest	Natural	Harvest	Natural	Harvest	Natural
Bf	2,913	1,556	-		1,545		134					
Bw	5,883	2,935	-		3,896		667					
OC	1,276	616	105		670		46		51			
Pj	1,059	606	-		785		492					
Po	814	619	-		382		250					
Pr	5											
S	3,720	2,281	-		2,301		644					
Pw	1,859	723	-		1,421		158					
TH	16,825	22,732	24,730		14,129		3,575		13,664			
MxT		3,456	-				317					
MxC		341										
BwCC		-	105						29			
MxC	-	-	455						144			
MxH1			1,605						242			
MxH2			175						84			
PjCC		-	930						279			
PoCC			15						7			
PwST		-	290						60			
PwUS			680						99			
SbCC		-	405						19			
Bw	7,256	13,925	-		1,274		1,766					
By	1,070				409							
Pj	1,178	466			750		281					
Po	2,856	1,674			177		1,000					
Mh	4,974				1,095							
OC	595	2			142							
Pw	1,230	739			231		74					
SP	6,528	6,387			3,165		1,297					
TH		5,286	-				1,060					
BfAll			265						116			
BwSft		-	1,600						441			
BwHrd			8,680						755			
PjHrd			55						21			
PjSft			275						243			
PoSft			429						294			
PrHrd			536						590			
SpLo			808						515			
SpHrd			445						302			
SbSft			1,550						1,095			
BwSL			830						79			
PwUS			360						47			
ByUS			1,050						20			
OCAll			475						29			
HdUS			1,110						47			
MhSel			2,010						18			
BwHd1				504								
BwHd2				2,165								
ByUS				2,134								
HdSel				14,441								
HdUS				3,056								
MxC				7,414								
MxH				753								
MxW				4,619								
OCAll				1,120								
PjPur				598								
PoPur				204								
PrAll				-								
PwUS				315								
SbPur				4,089								
Total Area	61,331	65,115	46,[illegible]	43,754	33,8[illegible]	-	10,460		19,040		-	-


Planned & Actual Depletion Areas for the Algoma Forest


Proportion of Actual to Planned Depletions by Forest Cover Type

SOURCE: [illegible]

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Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY WORKING GROUP (FMP-2)

Working Group	Age Class	Protection Forest			Production Forest (ha)									Total Productive Forest		
					B&S			Depleted			Forest Stands					
		1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010
OH	1-20		-	-		-	-		-	-	-	-	-	-	-	-
	21-40		-	-		-	-		-	-	-	-	-	-	-	-
	41-60		-	-		-	-		-	-	-	15	7	-	15	7
	61+		-	-		-	-		-	-	227	-	-	-	-	-
OH Subtotal		45	-	-	-	-	-	-	-	-	227	15	7	272	15	7
Bf	1-20		-	-		142	419		-	-	2,480	38	73	-	180	492
	21-40		-	-		-	-		-	-	1,170	643	321	-	643	321
	41-60		-	-		-	2		-	-	7,886	7,869	6,916	-	7,869	6,918
	61-80		152	74		62	82		-	-	12,273	12,599	12,858	-	12,813	13,014
	81-100		67	67		-	1		-	-	6,957	1,630	3,764	-	1,697	3,832
	101-120		-	-		-	-		-	-	873	70	70	-	70	70
	121-140		-	-		-	-		-	-	269	17	17	-	17	17
	141-160		-	-		-	-		-	-	116	7	7	-	7	7
Bf Subtotal		420	219	141	3,952	204	504	-	-	-	32,024	22,873	24,026	36,396	23,296	24,671
Bw	1-20		92	350		8,270	7,312		-	-	2,212	831	2,300	-	9,193	9,962
	21-40		275	163		-	35		-	-	10,917	6,593	5,401	-	6,868	5,599
	41-60		5,021	3,480		12	16		-	-	50,660	50,408	39,651	-	55,441	43,146
	61-80		13,610	12,442		21	45		-	-	47,899	67,012	59,768	-	80,643	72,255
	81-100		3,161	5,943		25	73		-	-	51,721	34,858	49,339	-	38,044	55,355
	101-120		319	296		-	8		-	-	31,726	7,337	9,086	-	7,656	9,390
	121-140		206	267		-	-		-	-	20,387	4,078	4,501	-	4,284	4,768
	141-160		-	-		-	-		-	-	10,182	212	264	-	212	264
	161-180		-	-		-	-		-	-	188	-	-	-	-	-
	181-200		-	-		-	-		-	-	52	-	-	-	-	-
Bw Subtotal		24,966	22,684	22,941	13,858	8,328	7,488	-	-	-	225,944	171,329	170,309	264,768	202,341	200,738
By	1-20		-	-		248	75		-	-	197	60	-	-	308	75
	21-40		-	-		-	4		-	-	98	125	108	-	125	112
	41-60		-	-		-	-		-	-	308	610	89	-	610	89
	61-80		29	-		92	-		-	-	874	4,716	447	-	4,837	447
	81-100		-	-		32	85		-	-	2,132	6,974	5,309	-	7,006	5,394
	101-120		10	-		337	58		-	-	1,987	19,541	7,733	-	19,888	7,791
	121-140		-	10		60	346		-	-	5,780	5,427	20,627	-	5,487	20,983
	141-160		-	-		-	57		-	-	21,708	3,295	7,139	-	3,295	7,195
	161-180		-	-		-	29		-	-	592	2,917	3,108	-	2,917	3,137
	181-200		-	-		-	-		-	-	630	-	75	-	-	75
By Subtotal		280	39	10	1,599	769	655	-	-	-	34,306	43,665	44,634	36,185	44,473	45,298
Ce	1-20		-	-		370	179		-	-	1,119	34	43	-	404	222
	21-40		-	-		35	-		-	-	136	54	24	-	89	24
	41-60		-	-		-	-		-	-	245	499	110	-	499	110
	61-80		105	8		4	-		-	-	903	1,962	1,106	-	2,071	1,113
	81-100		99	48		57	2		-	-	1,296	14,394	12,432	-	14,510	12,482
	101-120		1	1		29	23		-	-	2,292	7,136	9,633	-	7,166	9,658
	121-140		53	99		40	25		-	-	4,642	5,096	5,086	-	5,189	5,211
	141-160		41	27		14	17		-	-	13,820	2,410	2,483	-	2,465	2,528
	161-180		-	15		-	6		-	-	464	228	236	-	228	257
	181-200		-	-		-	-		-	-	3	62	85	-	62	85
Ce Subtotal		162	299	198	2,745	549	253	-	-	-	24,920	31,875	31,239	27,827	32,683	31,689

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Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY WORKING GROUP (FMP-2)

Working Group	Age Class	Protection Forest			Production Forest (ha)									Total Productive Forest		
					B&S			Depleted			Forest Stands					
		1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010
He	61-80		-	-		-	-		-	-	-	11	-	-	11	-
	81-100		-	-		-	-		-	-	-	35	46	-	35	46
	101-120		-	-		-	-		-	-	26	125	124	-	125	124
	121-140		-	-		-	-		-	-	-	313	293	-	313	293
	141-160		-	-		-	-		-	-	22	475	490	-	475	490
	161-180		-	-		-	-		-	-	-	16	16	-	16	16
	181-200		20	19		-	-		-	-	-	101	101	-	121	120
He Subtotal		-	20	19	-	-	-	-	-	-	48	1,076	1,070	48	1,096	1,089
La	1-20		-	-		51	45		-	-		-	101	-	51	146
	21-40		-	-		-	-		-	-		1	17	-	1	17
	41-60		-	-		-	-		-	-		19	19	-	19	19
	61-80		-	-		-	-		-	-		88	52	-	88	52
	81-100		21	21		-	-		-	-		118	161	-	139	182
	101-120		-	-		-	-		-	-		1	36	-	1	36
	121-140		-	-		-	-		-	-		-	-	-	-	-
	141-160		-	-		27	-		-	-		236	56	-	263	56
La Subtotal		-	21	21	-	78	45	-	-	-	-	463	443	-	562	509
Mh	1-20		-	-		839	927		-	-	10,838	3,248	147	-	4,087	1,074
	21-40		-	-		44	42		-	-	3,157	4,278	3,143	-	4,322	3,185
	41-60		342	14		608	218			-	15,110	42,057	2,547	-	43,007	2,779
	61-80		1,206	970		2,082	1,435		-	-	17,375	85,581	25,882	-	88,869	28,286
	81-100		702	850		1,038	5,928		-	-	16,253	47,664	88,574	-	49,404	95,351
	101-120		259	257		403	5,147		-	-	21,129	22,264	48,720	-	22,926	54,125
	121-140		92	91		94	1,955		-	-	42,492	7,480	23,103	-	7,666	25,150
	141-160		-	-		-	334		-	-	110,547	2,189	4,359	-	2,189	4,692
	161-180		-	-		-	166		-	-	233	89	148	-	89	315
	181-200		-	-		-	-		-	-	48	-	88	-	-	88
Mh Subtotal		11,549	2,601	2,182	3,835	5,108	16,152	-	-	-	237,182	214,850	196,710	252,566	222,559	215,044
Ms	1-20		-	-		-	52		-	-	-	17	-	-	17	52
	21-40		-	-		2	-		-	-	-	1,100	-	-	1,102	-
	41-60		249	-		-	2		-	-	-	2,024	1,940	-	2,273	1,941
	61-80		64	329		-	8		-	-	-	828	4,882	-	892	5,219
	81-100		-	38		-	36		-	-	-	59	1,209	-	59	1,283
	101-120		-	-		-	9		-	-	22	-	93	-	-	102
	121-140			-			-			-	-		90	-	-	90
	141-160			1			-			-	25		-	-	-	1
Ms Subtotal		-	313	368	-	2	107	-	-	-	47	4,028	8,213	47	4,343	8,688
Or	1-20		-	-		-	6		-	-		-	-	-	-	6
	21-40		-	-		-	-		-	-		-	-	-	-	-
	41-60		167	-		-	-		-	-		158	-	-	325	-
	61-80		18	145		-	-		-	-		256	138	-	274	283
	81-100		21	38		-	-		-	-		135	283	-	156	321
	101-120		-	21		-	9		-	-		89	123	-	89	153
	121-140		-	-		-	-		-	-		-	88	-	-	88
	141-160		206	-		5	-		-	-		638	-	-	849	-
Or Subtotal		-	412	204	-	5	16	-	-	-	-	1,276	631	-	1,693	851

2008 Independent Forest Audit

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Working Group	Age Class	Protection Forest			Production Forest (ha)									Total Productive Forest		
					B&S			Depleted			Forest Stands					
		1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010
Pj	1-20		-	-		2,814	3,087		-	-	9,309	3,133	7,012	-	5,947	10,099
	21-40		15	-		-	-		-	-	2,079	5,165	5,455	-	5,180	5,455
	41-60		10	-		-	-		-	-	2,247	7,369	2,355	-	7,379	2,355
	61-80		-	7		-	-		-	-	8,700	2,821	6,106	-	2,821	6,113
	81-100		-	-		-	-		-	-	2,693	987	2,556	-	987	2,556
	101-120		-	-		-	-		-	-	867	622	803	-	622	803
	121-140		-	-			-			-	546		41	-	-	41
	141-160		-	-			-			-	64		-	-	-	-
	161-180		-	-			-			-	-		35	-	-	35
Pj Subtotal		774	25	7	3,790	2,814	3,087	-	-	-	26,505	20,097	24,363	31,069	22,936	27,457
Po	1-20		-	-		1,664	2,675		-	-	982	1,618	925	-	3,282	3,600
	21-40		91	-		-	18		-	-	2,705	4,070	1,819	-	4,161	1,837
	41-60		428	219		-	5		-	-	5,260	12,264	4,938	-	12,692	5,162
	61-80		189	403		-	9		-	-	10,620	7,887	14,066	-	8,076	14,478
	81-100		170	211		-	60		-	-	5,926	5,445	8,181	-	5,615	8,452
	101-120		225	-		1,095	-		-	-	1,920	14,763	1,238	-	16,083	1,238
	121-140		7	7		-	-		-	-	899	-	-	-	7	7
	141+		-	-		-	-				383	-	-	-	-	-
Po Subtotal		2,053	1,110	840	1,300	2,759	2,766	-	-	-	28,695	46,047	31,167	32,048	49,916	34,774
Pr	1-20		-	-		-	12		-	-	282	136	117	-	136	129
	21-40		-	-		-	5		-	-	635	388	78	-	388	83
	41-60		-	-		-	-		-	-	21	99	373	-	99	373
	61-80		-	-		-	-		-	-	-	14	-	-	14	-
	81-100		-	-		-	-		-	-	-	12	10	-	12	10
	101-120		-	-		-	-		-	-	-	-	12	-	-	12
	121-140		-	-		-	-		-	-	13	24	-	-	24	-
	141-160		-	-		-	-		-	-	-	16	24	-	16	24
	161-180		-	-		7	-		-	-	-	-	16	-	7	16
Pr Subtotal		9	-	-	50	7	16	-	-	-	951	649	629	1,010	656	646
Pw	1-20		-	-		68	267		-	-	407	169	492	-	237	759
	21-40		-	-		-	-		-	-	144	90	109	-	90	109
	41-60		10	-		-	-		-	-	-	1,234	101	-	1,244	101
	61-80		11	-		-	-		-	-	585	1,502	569	-	1,513	569
	81-100		-	-		-	2		-	-	496	1,690	1,614	-	1,690	1,616
	101-120		7	-		-	7		-	-	659	2,846	1,589	-	2,853	1,596
	121-140		-	-		-	-		-	-	2,264	2,303	2,690	-	2,303	2,690
	141-160		39	-		-	1		-	-	11,423	1,628	2,831	-	1,667	2,832
	161-180		-	38		-	-		-	-	70	1,527	1,495	-	1,527	1,533
	181-200		-	-		-	-		-	-	50	265	1,346	-	265	1,346
	201+		67	-		186	-		-	-	-	-	120	-	253	120
Pw Subtotal		439	134	38	4,890	254	277	-	-	-	16,098	13,254	12,955	21,427	13,642	13,270

2008 Independent Forest Audit

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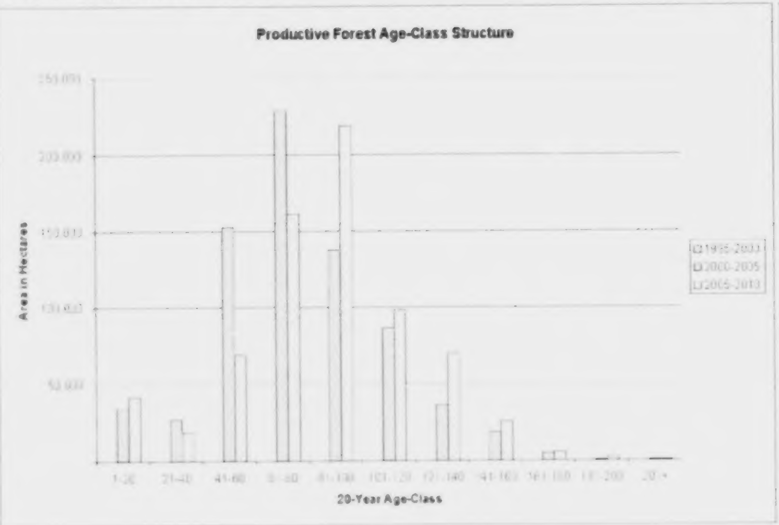
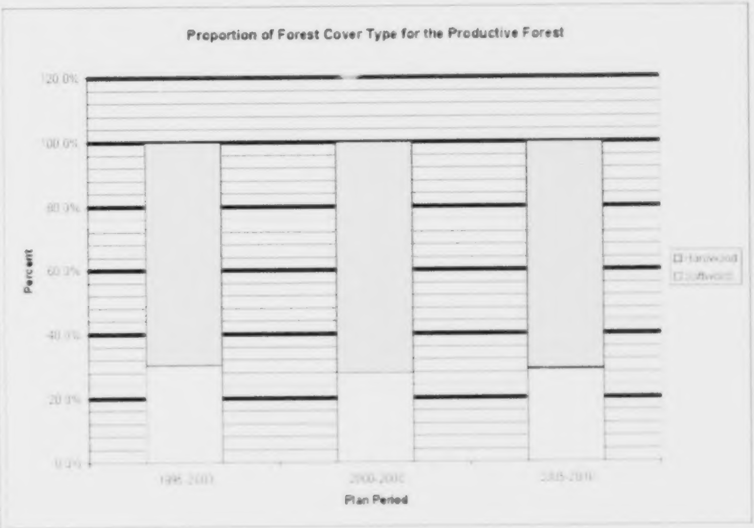
Working Group	Age Class	Protection Forest			Production Forest (ha)									Total Productive Forest		
					B&S			Depleted			Forest Stands					
		1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010	1995-2000	2000-2005	2005-2010
Sb*	1-20		6	30		7,847	10,533		-	-	2,006	596	3,035	-	8,449	13,598
	21-40		5	-		-	-		-	-	2,050	2,728	631	-	2,733	631
	41-60		94	-		-	-		-	-	10,862	19,331	4,790	-	19,425	4,790
	61-80		282	53		9	16		-	-	16,758	25,092	18,019	-	25,383	18,088
	81-100		86	115		-	18		-	-	23,199	17,614	30,309	-	17,700	30,442
	101-120		53	87		-	-		-	-	27,275	8,752	12,829	-	8,805	12,916
	121-140		229	187		-	-		-	-	22,578	10,089	10,329	-	10,318	10,516
	141-160		22	22		-	-		-	-	12,631	6,437	6,859	-	6,459	6,881
	161-180		-	-		-	-		-	-	208	-	37	-	-	37
	181-200		5	5		-	-		-	-	228	53	53	-	58	57
Sb Subtotal		1,084	782	499	16,422	7,856	10,567	-	-	-	117,795	90,692	86,890	135,301	99,330	97,956
Sw	1-20		-	-		882	770		-	-		947	316	-	1,829	1,086
	21-40		-	-		-	50		-	-		848	677	-	848	726
	41-60		-	-		-	-		-	-		1,815	905	-	1,815	905
	61-80		-	-		-	2		-	-		541	1,661	-	541	1,663
	81-100		-	-		-	3		-	-		517	1,895	-	517	1,898
	101-120		-	-		-	-		-	-		298	201	-	298	201
	121-140		-	-		-	-		-	-		149	367	-	149	367
Sw Subtotal		-	-	-	-	882	825	-	-	-	-	5,115	6,021	-	5,997	6,846
	Grand Total	41,781	28,619	27,468	52,441	29,615	42,757	-	-	-	744,742	667,304	639,307	838,964	725,538	709,532

* 00/05 & 05/10 is Ash (A)

* 95-00 values are OC (likely Ce & La combined)

* 95-00 values are spruce (likely Sb & Sw combined)





SOURCE: Algoma & Wawa 1995-2000 FMP Table 4.1.1
Algoma & Wawa 2000-2005 FMP Table FMP-2
Algoma 2005 FMP Table FMP-2

2006 Independent Forest Audit

Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS (RPFO-7)

	Area Summary of all Forest Units (ha)					
	1995 - 2000		2000 - 2005		2005 - 2010	
	Planned	Actual	Planned	Actual	Planned	Actual
Renewal						
Regeneration						
Uneven-Aged Management						
Selection Cut - Harvest	11,102	6,895	23,193	11,615	14,443	N/C
Total Uneven-Aged Management	11,102	6,895	23,193	11,615	14,443	-
Even-Aged Management						
Natural Regeneration						
Clearcut	19,783	1,075	7,550	-	9,878	N/C
Strip Cut	-	-	-	-	-	N/C
Seed Tree Cut	1,025	106	1,038	-	-	N/C
Uniform Shelterwood Seed Cut	19,585	3,326	7,364	2,268	12,117	N/C
Subtotal Natural	40,393	4,507	15,952	2,268	21,995	-
Artificial Regeneration						
Planting	5,945	4,445	6,571	4,819	6,888	N/C
Seeding direct	-	-	-	-	-	N/C
with site preparation	479	-	-	-	-	N/C
Scarification	110	-	-	-	676	N/C
Subtotal Artificial	6,534	4,445	6,571	4,819	7,564	-
Total Even-Aged Management	46,927	8,951	22,523	7,087	29,559	-
Total Regeneration	58,029	15,846	45,716	18,702	44,002	-
Site Preparation						
Mechanical	2,593	1,155	4,873	2,167	3,603	N/C
Chemical	1,893	1,924	564	-	-	N/C
Prescribed Burn	1,650	436	0	58	-	N/C
Total Site Preparation	6,136	3,515	5,437	2,225	3,603	-
Tending						
Cleaning						
manual	500	-	-	-	-	N/C
chemical - ground	1,647	208	2,842	689	497	N/C
- aerial	1,097	496	993	1,870	2,166	N/C
mechanical	200	-	-	-	-	N/C
prescribed burn	-	-	-	-	-	N/C
Spacing, pre-commercial thinning, improvement cutting						
even-aged	2,300	477	2,611	1,357	6,783	N/C
uneven-aged	2,200	1,018	13,638	6,062	8,666	N/C
Cultivation			-	-	-	N/C
Total Tending	7,944	2,199	20,084	9,978	18,111	-
Protection (Insect Pest Control)						
accelerated harvest	-	-	-	-	-	N/C
salvage	-	-	-	-	-	N/C
manual protection	-	-	-	-	-	N/C
ground insecticide	-	-	-	-	-	N/C
aerial insecticide	-	-	-	-	-	N/C
Total Protection	-	-	-	-	-	-

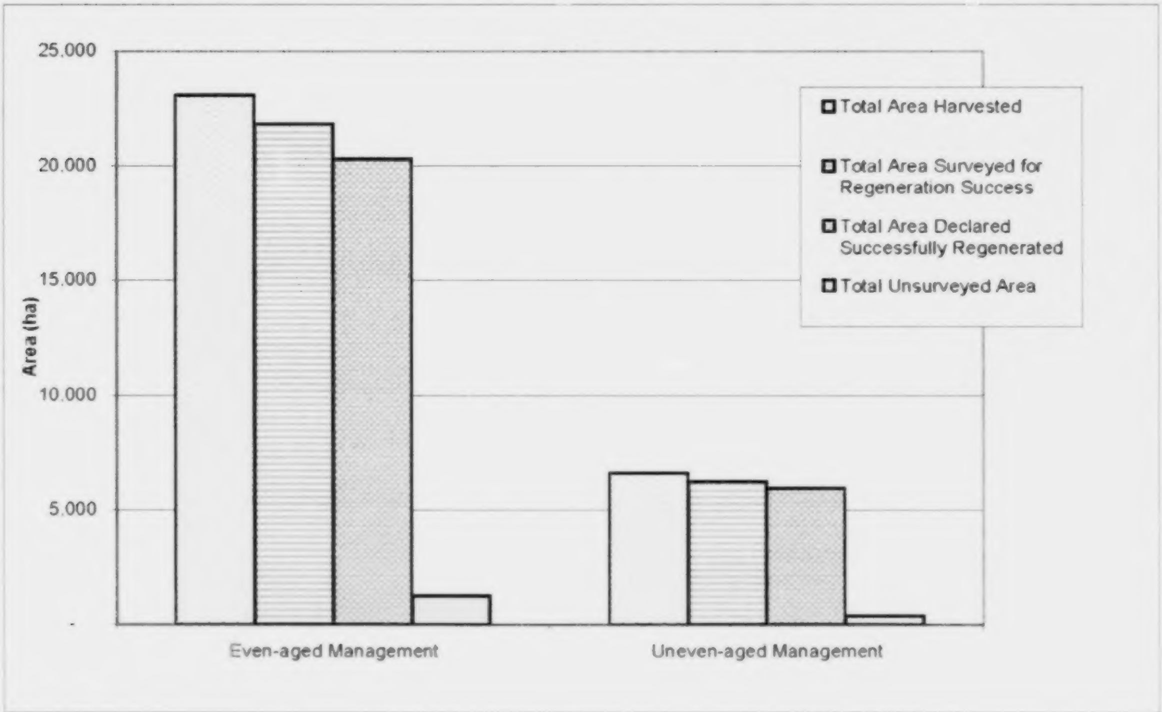
Source: Algoma & Wawa 1995-2000 RPFO Table RPFO-7
Algoma & Wawa 2004 AR Table AR-7
Algoma 2005 FMP Table FMP-25

2006 Independent Forest Audit

Table 7 - Harvested Area Successfully Regenerated - Summary of All Forest Units

MU: ALGOMA FOREST

	AREA IN HECTARES (All Forest Units Combined)	*AREA IN HECTARES (All Forest Units Combined)*
	Even-aged Management	**Uneven-aged Management**
Total Area Harvested	23,084	6,613
Total Area Surveyed for Regeneration Success	21,835	6,233
Total Unsurveyed Area	1,249	380
Total Area Declared Successfully Regenerated	20,300	5,945
Total Area Surveyed Not Successfully Regenerated		
NSR	833	253
B&S	382	-
Not Available for Regen. (eg. Roads & landings)	131	35
Other	189	-
Percent of Area Surveyed Declared Successfully Regenerated	93.0%	95.4%



Source:

Clergue Forest Management Inc. GIS (Depletion and Silviculture Records)

Appendix B

Audit Team Members and Responsibilities

Audit Team Members and Responsibilities

Name	Role	Responsibilities	Credentials
Rod Seabrook, CEA (SFM), EMS (LA)	Lead Auditor	Overall audit coordination and oversight of activities of the audit team. Review of management objectives, contractual obligations, and forest sustainability.	M.Sc. Biology, CEA(SFM), EMS(LA); 25 years forestry experience in Ontario; auditor on 13 Independent Forest Audits (nine as lead auditor), 38 ISO 14001 audits, 6 CSA Z809 audits, ten SFIS audits and one FSC audit.
Dave Thomson, R.P.F.	Forest Management Planning Auditor	Review of forest management planning requirements and public participation.	R.P.F.; 28 years of forestry and resource management experience in Ontario and Manitoba; certified environmental auditor with the Quality Management Institute; completed ISO 14001 lead-auditor training; Audit Secretariat and/or Planning Auditor on five Independent Forest Audits; Auditor or Lead Auditor (in training) on three environmental or forest certification audits.
Tom Richardson	Harvesting Operations Auditor	Review harvest planning, plan implementation, harvesting operations and compliance.	34 years of forestry experience, including 30 years with the MNR and four years as an independent forest consultant; professional skills in wood measurement, forest compliance.
Gabriele Aleksa, R.P.F.	Silviculture Operations Auditor	Review renewal and silvicultural practices and related documentation.	R.P.F.; 25 years experience in natural resource management; resource stewardship agreement (RSA) consultant; audited private land harvesting practices for litigation purposes; auditor on one Independent Forest Audit.
John McNicol	Wildlife/ Ecology Auditor	Review AOC documentation and practices. Review aspects of forest management related to environmental and wildlife practices. Review access planning and implementation.	M.Sc. Zoology; 32 years forestry experience; co-authored many of the guidelines currently used in forest management planning; auditor on six Independent Forest Audits.
Susan Jarvis, R.P.F.	Forest Modelling Auditor	Review SFMM strategic planning.	R.P.F.; 24 years of forestry experience in Ontario; auditor on 14 Independent Forest Audits.
Mary Anne Seabrook	First Nations Auditor	Review documentation and interview relevant First Nations regarding consultation and involvement in forest management activities.	Business Dipl.; of Ojibway descent and a member of the Red Rock Indian Band; a diverse social background with over 25 years experience working with various Aboriginal organizations and government; Native Auditor on four IFAs and one FSC audit.
Ben Newman, R.P.F.	Secretariat	Coordinate audit logistics and report preparation. Review public commitments and document control.	R.P.F.; 11 years of forest management experience including authoring innovative silviculture and logging prescriptions and leading forest research and monitoring programs; Audit Secretariat on one Independent Forest Audit.

Appendix C

Independent Forest Audit Guiding Principles

Independent Forest Audit Guiding Principles

Guiding Principles within the Independent Forest Audit Process and Protocol

1. Commitment

Commitment is reflected in vision, mission and policy statements of the company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.

2. Public Participation

The process of sustainable forest planning, implementation and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizens Committee, native groups, and other parties with an interest in the operations of the forest unit.

3. Forest Management Planning

The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve that goal. Certain minimum standards and procedures have been established upon which all management units are evaluated.

4. Plan Implementation

Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievement of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.

5. System Support

System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

6. Monitoring

The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

7. Achievement of the Management Objectives and Forest Sustainability

Periodic assessments of the management of the forest unit operations and the forest unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.

8. Contractual Obligations

The licensee must comply with the specific licence requirements.

Appendix D

List of Acronyms

List of Acronyms

AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
CFSA	Crown Forest Sustainability Act
EA	Environmental Assessment
FIM	Forest Information Manual
FMNCP	Forest Management Native Consultation Program
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operation Information Program
FOP	Forest Operation Prescriptions
FRI	Forest Resource Inventory
FTG	Free to Grow
FU	Forest Unit
GLSL	Great Lakes-St. Lawrence
HAT	Heritage Assessment Tool
HPA	High Priority Aspects
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
KBM	KBM Forestry Consultants Inc.
LCC	Local Citizens Committees
MAFA	Moose Aquatic Feeding Areas
MNR	Ministry of Natural Resources
MTR	Ministry of Tourism, Culture & Recreation
NDPEG	Natural Disturbance Pattern Emulation Guide
NIC	Not-in-Compliance
NRVIS	Natural Resource Values Information System
RBT	Resource-Based Tourism
RPF	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SEV	Statement of Environmental Values
SEIM	Socio-Economic Impact Model
SFL	Sustainable Forest Licence
SFMM	Strategic Forest Management Model
SGR	Silviculture Ground Rules
STP	Silvicultural Treatment Package
TAR	Comparison and Trend Analysis of Planned versus Actual Forest Operations

Appendix E

Summary of Input to the Audit Process

Summary of Input to the Audit Process

General Public and Other Stakeholders

KBM solicited input into the audit via newspaper advertisements and direct mailings. Various replies were received with comments on more than one subject or issue. The following is a list of relevant comments received, sorted by subject.

Issue or Comment	How Issue or Comment was Addressed by the Audit Team
Nine respondents indicated Clergue and/or MNR were supportive of their unspecified concern	None necessary
One local roads board was pleased with Clergue's maintenance of roads and bridges	Sample of roads and bridges inspected
One person complemented the site preparation work completed by Clergue	Sample of site preparation inspected
One landowner is concerned about rutting and erosion on a specific site	Site inspected
One person felt that reforestation was inadequate on the Forest	Renewal program examined
Four remote based tourism operators or public citizens commented on either the inadequacy or excess of lakeshore reserves/remote recreation opportunities	Considered by audit team
Two resource users reported poor utilization on a site	Site inspected
Two people commented on the excessive complexity of the FMP	Considered by audit team
Two individuals felt that the public has insufficient input toward provincial forest policy	Out of scope
Two stakeholders reported impacts to their bear management areas	Considered by audit team
Two trappers reported damage to trapline trails and marten boxes	LCC trapper's representative interviewed
Two people were dissatisfied with the stakeholder representation on LCC	LCC membership reviewed
Three comments from the public and resource user groups identified wildlife and wildlife habitat concerns	Protection of wildlife values and habitat examined
One resource user group felt the socio economic benefits of hunting were under-represented in the FMP	Considered by audit team
One person desired better access to firewood	Considered by audit team
One stakeholder representative felt there was inadequate use of local (Wawa) suppliers and contractors	Out of scope
One stakeholder believes the lack of a Clergue office in Wawa was unacceptable	Considered by audit team
One recipient of a Crown land lease requires more information regarding herbicide use, the ecological impact of harvesting, availability of documentation, and the need to conduct an independent review of the FMP	Considered by audit team

Local Citizens Committee

On the evening of May 17, 2006, members of the audit team met with the Algoma LCC. The entire audit team met with the Wawa LCC on the evening of September 11, 2006. Part of the purpose was to determine how its members wished to be consulted. The issues and conclusions of the audit team are as follows.

Issue or Comment	How Issue or Comment was Addressed by the Audit Team
Wawa LCC	
The LCC currently lacks a planning team representative	Membership and effectiveness of planning team reviewed
LCC is provided good training and background information for planning	Audit team met with LCC and interviewed LCC members
Members are concerned about access restrictions on the Forest	Audit team met with LCC, including member most involved in this issue, and discussed the concern.
LCC feels limited by their budget	Audit team discussed LCC budget during interviews with MNR
Algoma LCC	
Concerned about regeneration of tolerant hardwoods	Considered by audit team
Amalgamated Forest requires more intensive auditing	Audit team met the requirements of the IFAPP and the audit plan
Lack of coordination with Wawa LCC	Discussed at meetings with both LCCs and in interviews with MNR
Good support from MNR and Clergue, but forest management planning is too complex	Discussed at meeting with LCC

Two members of the LCCs, plus four industry members who were required to attend as auditees, participated during the field audit.

Native Communities

Individual letters were sent to the seven First Nations on or adjacent to the Algoma Forest (Michipicoten First Nation, Mississauga First Nation, Thessalon First Nation, Garden River First Nation, Batchewana First Nation, Missanabie Cree First Nation and Chapleau Ojibway First Nation) informing them of the audit and asking for their participation. They were subsequently contacted by phone. One First Nation did not wish to participate in the audit and three First Nations did not respond. Michipicoten, Thessalon, and Mississauga agreed to meet with the auditor in their respective communities. There were no overall concerns and two of the First Nations expressed a good working relationship with MNR and Clergue. A total of four person days were spent arranging and meeting with local First Nation communities as well as staff from MNR and Clergue.

Overlapping Licensees

Representatives from St. Marys Paper, Boniferro, Columbia Forest Products, and Midway Lumber were present for various portions of the audit. They were able to answer detailed questions regarding the results of their operations.

SFL Holder

Clergue provided significant input to the audit process. This included the provision of background information and participation in the pre-audit, field audit and review of the audit report. Staff described the planning and operational history for each of the field sites audited. Additional office interviews assisted with the completion of audit protocols. Clarification of factual information was provided in writing and during additional personal interviews while the audit report was reviewed.

The audit team, in consultation with Clergue and MNR Sault Ste. Marie and Wawa district staff, prepared a list of High Priority Aspects for consideration during the audit. Additional issues raised by Clergue during these discussions included management of white pine, maintenance of values information in NRVIS, and the FMP planning, review and approval process. The audit team consider the additional issues during the audit and discussion is included in the audit report where appropriate.

Ministry of Natural Resources

MNR District staff attended various aspects of the audit, and provided input for the benefit of the audit team. A significant quantity of background information was gathered from MNR. Staff accompanied the audit team during the field audit to ensure the corroboration of facts regarding each site.

The Forest Analyst for the Forest Evaluation and Standards Section (Forest Management Branch) attended the field portion of the audit and participated in the review of the audit report. A regional representative (Forest Program Specialist, Northeast) and the Coordinator of Forest Practices Evaluation (Forest Evaluation and Standards Section) reviewed the audit report and provided additional background in writing and personal interviews during that period.

Appendix F

Public Survey

KBM FORESTRY CONSULTANTS INC.
2006 INDEPENDENT FOREST AUDIT
PUBLIC SURVEY

Every five years, as part of the Province's responsibility for resource management in Ontario, the Ministry of Natural Resources (MNR) contracts firms to evaluate forest management activities on Crown lands. KBM Forestry Consultants Inc. of Thunder Bay, Ontario has been engaged by the MNR this year to conduct an independent forest audit of the Algoma Forest for the 2001-2006 period.

As part of our evaluation, we would appreciate your input as a member of the public with an interest in forest management on the Algoma Forest. If you have comments related to forestry activities during the five-year period April 1, 2001 to March 31, 2006, please complete and submit this form (please see back of sheet for more information on the audit process).

KBM provides this opportunity to comment on the Algoma Forest audit, under the authority of Ontario Regulation 160/04 made under the Crown Forest Sustainability Act, 1994. Any personal information provided will be used solely by the audit team as input to the Algoma Forest Independent Forest Audit. Any questions regarding the collection, use, and retention of the personal information can be directed to Rod Seabrook, Lead Auditor at 807-345-5445 ext. 261(email: rsea@kbm.on.ca) or to the company address indicated below.

Name:
(optional)

Tel. and/or email:
(optional)

What is your interest in forest management on the Algoma Forest?

Recreation ☐
Employment (forestry, tourism, etc.) ☐
Conservation ☐
Other:

Can you identify any specific locations or activities on the Algoma Forest that illustrate good OR poor management practices, and that the audit team should be aware of in conducting their evaluation? Please provide details.

Have you ever contacted forest managers with comments or concerns during the 2001-2006 audit period?
(e.g., local Ministry of Natural Resources, Clergue Forest Management Inc.) ☐**Yes** ☐**No**

If yes, were you satisfied with the response? ☐**Yes** ☐**No**

Feel free to add any additional comments (use additional sheet if required).

6. Please indicate if we may contact you for more information. ☐**Yes** ☐**No**
(If Yes ensure that you have provided your contact information above.)

Please **mail, email, or fax** the completed survey (Attention: Ben Newman) to the address/fax number below by **Friday August 25, 2006**.

The survey can also be accessed through our website, located at www.kbm.on.ca

Although we cannot respond to everyone, we do take into consideration all comments received.
THANK YOU IN ADVANCE FOR YOUR INPUT.

KBM Forestry Consultants Inc.
bnewman@kbm.on.ca

349 Mooney Avenue
Thunder Bay, ON P7B 5L5
www.kbm.on.ca

Tel: (807) 345-5445 ext. 250
Fax: (807) 345-5858

INDEPENDENT FOREST AUDIT

Algoma Forest

KBM Forestry Consultants Inc. has been retained by the Ministry of Natural Resources (MNR) to conduct an Independent Forest Audit, consistent with the Crown Forestry Sustainability Act, on the management of the Algoma Forest.

The audit covers the April 1, 2001 to March 31, 2006 operating period. You are invited to comment on the forest management activities on the Algoma Forest for this period of time. Please mail, email, or fax this form to:

Ben Newman
KBM Forestry Consultants Inc.
349 Mooney Ave., Thunder Bay, ON P7B 5L5
bnewman@kbm.on.ca
Tel: (807) 345-5445 ext. 250
Fax: (807) 345-5858
Toll-Free: 1-800-465-3001

(All correspondence sent to KBM is confidential).

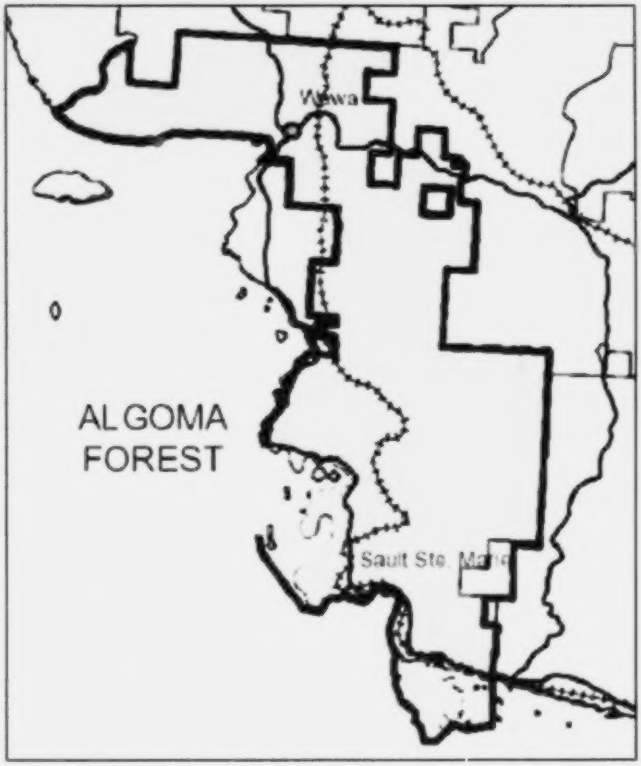
Alternatively, comments can be made directly to the Local Citizens Committee Chairperson:

Wawa LCC Chair
Danny Lacasse
P.O. Box 361
Wawa, ON, P0S 1K0
Tel: (705) 856-4814
Email:
dlacasse4@sympatico.ca

Algoma LCC Chair
Kerry Sinibaldi
75 Huron St.
SSM, ON P6A 5P4
Tel: (705) 541-2407
E-mail:
sinib_k@stmarys-paper.com

(The privacy of any information given to the LCC may not be protected).

Comments must be received by **Friday, August 25, 2006.**



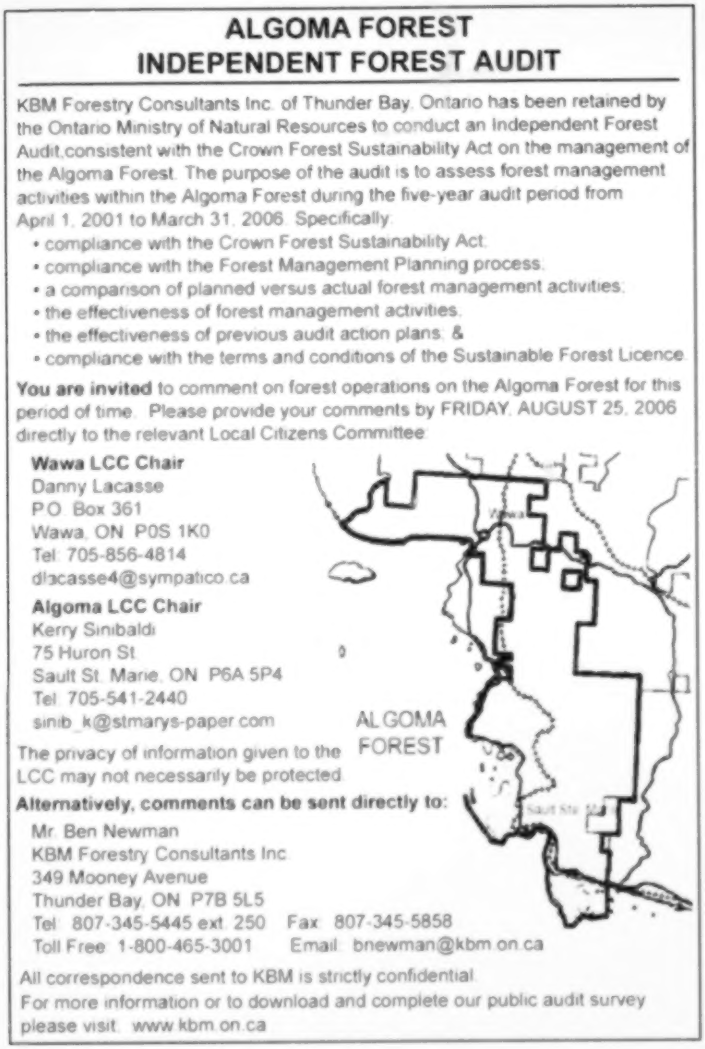
Purpose of the Independent Forest Audit
The Purpose of the audit is to assess:

- compliance with the *Crown Forest Sustainability Act*,
- compliance with the Forest Management Planning Process,
- a comparison of planned versus actual forest management activities,
- the effectiveness of forest management activities in achieving audit criteria and management objectives,
- assess the effectiveness of previous audit action plans, and
- where applicable, a licensee's compliance with the terms and conditions of the Sustainable Forest Licence.

The eight-member audit team will evaluate forest management planning and practices such as harvest operations, forest renewal activities, road construction and maintenance as well as opportunities for public input and First Nations consultation. The main objectives of the audit are to assess compliance with provincial laws and regulations as well as comment on the effectiveness and sustainability of forestry activities on the management unit.
In addition, the independent forest audit provides an opportunity to improve Crown land management in Ontario through adaptive management. The audits are conducted by consultants that are independent of the Ministry of Natural Resources and the companies being audited, and firms are selected in an arms-length process by the Forestry Futures Committee of Ontario.

Appendix G

Public Notification



ALGOMA FOREST
INDEPENDENT FOREST AUDIT

KBM Forestry Consultants Inc. of Thunder Bay, Ontario has been retained by the Ontario Ministry of Natural Resources to conduct an Independent Forest Audit,consistent with the Crown Forest Sustainability Act on the management of the Algoma Forest. The purpose of the audit is to assess forest management activities within the Algoma Forest during the five-year audit period from April 1, 2001 to March 31, 2006. Specifically:

- compliance with the Crown Forest Sustainability Act;
- compliance with the Forest Management Planning process;
- a comparison of planned versus actual forest management activities;
- the effectiveness of forest management activities;
- the effectiveness of previous audit action plans; &
- compliance with the terms and conditions of the Sustainable Forest Licence.

You are invited to comment on forest operations on the Algoma Forest for this period of time. Please provide your comments by FRIDAY, AUGUST 25, 2006 directly to the relevant Local Citizens Committee:

Wawa LCC Chair
Danny Lacasse
P.O. Box 361
Wawa, ON P0S 1K0
Tel: 705-856-4814
dlacasse4@sympatico.ca

Algoma LCC Chair
Kerry Sinibaldi
75 Huron St.
Sault St. Marie, ON P6A 5P4
Tel: 705-541-2440
sinib_k@stmarys-paper.com

The privacy of information given to the LCC may not necessarily be protected.

Alternatively, comments can be sent directly to:

Mr. Ben Newman
KBM Forestry Consultants Inc.
349 Mooney Avenue
Thunder Bay, ON P7B 5L5
Tel: 807-345-5445 ext. 250 Fax: 807-345-5858
Toll Free: 1-800-465-3001 Email: bnewman@kbm.on.ca

All correspondence sent to KBM is strictly confidential.
For more information or to download and complete our public audit survey please visit: www.kbm.on.ca